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The Future of the Child with Diabetes[1]

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IT WAS fitting that the first patient to be treated with insulin was a diabetic child. On January 11, 1922 at the Toronto General Hospital, Leonard Thompson, a fourteen-year-old boy with diabetes of two years' duration was given an injection of an extract of pancreas prepared by Drs. Banting and Best (1). Since then, literally millions of persons with diabetes, including thousands of children, have received the benefit of insulin and the blessing of longer, happier, and more useful lives. In the days before insulin it was the unusual child who lived longer than two years after the onset of diabetes. It is common knowledge that now children with diabetes live on and on, taking their places in the world about them. Not enough time has elapsed to indicate as yet what may be possible. However, the findings of Dr. Priscilla White in a recent follow-up study (2) are noteworthy in this regard. Of 1072 patients with onset of diabetes under the age of fifteen years and with duration of diabetes of twenty or more years, 879 or 82 per cent were living at the time of the study. Of these 879, 71 per cent were alive after twenty to twenty-nine years, 24 per cent after thirty to thirty-four years, and 5 per cent after thirty-five years or more of diabetes.

Furthermore, Dr. White's study showed that 30 per cent of these 879 patients with juvenile diabetes had attended college; 5 per cent had done graduate work. Twenty-six per cent were in professions, more than four times the number expected (6 per cent) in the general population.

Complications of Long-Term Diabetes

These data are indeed encouraging and attest vividly to the efficacy of insulin. There is, however, another side to the picture which is not so cheerful and which presents one of the greatest problems in the field of diabetes today. I refer to the fact that in a large percentage of these young patients, after fifteen, twenty, or more years of diabetes, complications develop which usually progress and become distinctly handicapping. These complications are chiefly vascular in nature and may cause marked damage to the eyes, heart, kidneys, and peripheral vessels. The involvement is of two types: (a) pathologic changes in the smaller blood vessels, venules as well as arterioles, and (b) premature arteriosclerosis, including atherosclerosis. The end-result in the patient who has had diabetes for twenty years or more often includes (a) diminished vision, or even blindness, due to retinopathy; (b) evidences of coronary artery disease; (c) arteriosclerosis, at least as seen in roentgenograms of the aorta, pelvic arteries, and arteries to the lower extremities; and (d) progressive kidney disease or "diabetic nephropathy" in which intercapillary glomerulosclerosis, arterio- and arteriolarsclerosis and acute and chronic pyelonephritis are intermingled. In the erstwhile juvenile diabetic, it is the renal disease which is most important, accounting for roughly 60 per cent of deaths in this group of patients (3) (Table 1).

The cause of the development of premature and extensive vascular disease in the young individual with long-term diabetes has been a matter of much discussion. There are those who maintain that, along with the tendency to diabetes, persons inherit a tendency to early vascular degeneration and that the latter is related to diabetes chiefly, if not entirely, by virtue of association. According to this thought, the development of vascular complications is largely a matter of the passage of time and not due to inadequate control of diabetes. Proponents of this idea maintain, therefore, that strict control of diabetes is unnecessary. They permit hyperglycemia and glycosuria, attempting only to avoid ketoacidosis, acetonuria, and frank symptoms of diabetes. They allow an unrestricted or free diet except for limitation of sweets and pastries.

This all-important matter as to the relationship of degree of control of diabetes to the frequency and

[1] Presented at the 39th Annual Meeting of The American Dietetic Association in Milwaukee, on October 9, 1956.

TABLE 1 Causes of death in 691 patients with onset of diabetes under the age of fifteen years*

PERIOD	PERCENTAGE OF DEATHS DUE TO					
	Coma	Coronary disease	Nephropathy†	Cerebro-vascular accident	Infections‡	Tuberculosis
1898–1922 (157 deaths)	86.0	—	—	—	6.4	—
1923–1936 (99 deaths)	56.6	—	2.0	—	23.2	8.1
1937–1943 (81 deaths)	27.2	2.5	12.3	1.2	24.7	9.9
1944–1949 (144 deaths)	9.7	10.4	36.8	2.1	6.9	11.1
1950–1955 (210 deaths) §	5.7	10.0	57.1	5.2	7.6	2.4

* Compiled by Statistical Department, Metropolitan Life Insurance Company. Adapted by permission from the Maryland State Medical Journal (3).

† Includes all deaths from renal disease.

‡ Excluding tuberculosis.

§ Deaths reported through December 1, 1955. Figures for 1950 and later are not strictly comparable with those of earlier periods because of a change in the basis of classification.

severity of late complications is one which has been of great interest and concern to us. We have given much time and thought to the problem and have carried out extensive studies of patients observed over many years in an attempt to correlate the degree of control with complications. The data acquired in such studies are not easy to analyze because of the many and varied influences which come into play on the life of any person over years of time. However, the results are sufficiently clear cut and definite to make us believe that the incidence and extent of complications are directly related to the control of diabetes (4). Duration of diabetes is important only in that it allows varying periods of time for the effect of inadequately controlled diabetes.

Treatment

DIET

If one accepts this premise, then it becomes of paramount importance to devise a plan of treatment which will provide the best possible control of diabetes. For a child this is not easy. Maintenance of dietary restrictions is admittedly difficult. However, experience in the office, hospital, home, and particularly in the camps for diabetic children has taught us that not only does a carefully regulated diet make control of diabetes much easier but that on such, the boy or girl can be happy, contented, and psychologically well adjusted. Unrestricted diets are to be condemned. Actually, many who state that they prescribe free diets, really follow definite plans involving certain restrictions. The following are the essentials of a well planned diet for children with diabetes: (a) the diet should be entirely adequate in terms of protein, minerals, vitamins, and calories; (b) carbohydrate should be limited in general to 200 gm., and certainly to 225 gm., a day; (c) between-meal snacks, adjusted in content to the type of insulin program being used, should be provided; and (d) reasonable constancy of dietary pattern from day to day should be achieved.

I believe that at the initiation of treatment and as a part of the education of the patient and his parents, the calculation of diets and the weighing of food should be taught. One must freely acknowledge that the carbohydrate, protein, and fat content of different samples of foods may vary from one to another considerably and that the actual values for a given serving of food may differ somewhat from the average values found in published tables. However, if instruction in weighing is given, there is more likelihood that the quantities of food actually eaten will be closer to the desired amount than if the diet is merely estimated or is selected by household measures. Instruction in weighing serves to acquaint the patient and his family with simple scientific procedures and principles. On the other hand, weighing should be regarded as a means to an end rather than as an end in itself. It should be carried out for four to six weeks or for such time as is necessary for the eye and hand to judge various types of food with reasonable accuracy. Then one returns to weighing for short periods from time to time for refresher experience or when some new food is eaten. I fear that the weighing of food has come to be considered out-moded and unnecessary, but I am convinced that if one is dealing with receptive patients and families, there is no better way to insure a proper diet and the making of proper substitutions than by a preliminary period of weighing food and carrying out the appropriate calculations.

INSULIN

All diabetic children need insulin for growth, maintenance of health, and indeed for survival. The varieties of depot insulin found most useful are the NPH, Lente, and globin types. Usually crystalline insulin must be given also, generally in the morning before breakfast in a single injection along with the NPH or lente variety. The dosage should be adequate to keep blood sugar within satisfactory limits and urine as free from sugar as possible without causing frequent or severe insulin reactions.

With many diabetic children a single injection of insulin—NPH or lente, with or without crystalline insulin—in the morning before breakfast does not suffice for adequate control. This occurs for various reasons, including the fact that in many patients, particularly children, the effect of the NPH and lente insulins does not last for a full 24 hr. Despite satisfactory blood sugar values before the noon and evening meals, there may be well marked

hyperglycemia before breakfast. This may be corrected by giving a second dose of insulin the latter part of the day. Most acceptable usually is a tiny dose of NPH or lente insulin at bedtime.

EXERCISE

In the normal child, physical activity promotes health and strength and, in the form of games and sports, lends enjoyment to life. In the diabetic child, also, exercise accomplishes this and it helps lower the blood sugar, as well. This is not an unmixed blessing, however, since in most children the diabetes is of unstable nature. Exercise, particularly if unusually strenuous or prolonged, may lead to hypoglycemic reactions which are annoying and at times may be alarming to parents. Prevention of reactions may be achieved at least in part by the routine giving of between-meal snacks furnishing 10 to 20 gm. carbohydrate. In children treated with NPH or lente insulin, it is especially important to give such a lunch in the mid-afternoon.

EDUCATION

All diabetic patients should be taught as much about their disease as their capabilities for learning will allow. Children are no exception. In the case of younger children, it is of vital importance that the parents be thoroughly familiar with the basic facts regarding the nature, treatment, and possible complications of diabetes. Every opportunity must be taken, either individually or in classes, to teach patients and their families.

Summer Camps

Within three years after the introduction of insulin into clinical practice, a summer camp for diabetic children was established near Detroit. This camp is no longer in existence, but the idea spread so that today there are thirty camps in the United States and Canada (5) (Fig. 1). Furthermore, the program has proved appealing to workers in other countries so that now there are camps for diabetic children in England, Belgium, France, West Germany, Austria, Switzerland, Italy, Australia, and South America—and probably this list is not complete. Camps differ greatly as to size, sponsorship, financing, recreational program, medical facilities and standards, personnel, and so on, but a brief description of the two which we have sponsored for years will illustrate the type of work being done in camps over the world.

The camps sponsored by the Joslin Clinic are the Clara Barton Birthplace Camp for girls and the Elliott P. Joslin Camp for boys. In the summer of 1956, the girls' camp had its twenty-fifth season and the boys' camp its ninth season. The camps are 3 mi. apart in North Oxford and Charlton, Massachusetts, respectively, about 50 mi. west of Boston. Throughout the years the camps have been ably supported and operated by the Association of Universalist Women.

Each camp is run for three sessions of three weeks each. The Clara Barton Birthplace Camp has a capacity of eighty and the Elliott P. Joslin Camp, eighty-five. In the summer of 1956 a total of 183 girls and 190 boys were accommodated at the two camps. Many of them remained for two or more sessions. In addition to the 373 campers, there were thirteen persons with diabetes among the counselor staff. Also, in 1956 a tenth week was held at the Clara Barton Birthplace Camp to accommodate adults; eleven women and seven men attended.

There is no set fee for attendance at camp, but parents are invited to contribute what they can toward the actual cost of maintenance of the child; at present this amounts to about $60 per camper per week. Over the years it has been our experience that the money contributed by parents amounts to 40 to 50 per cent of the total cost. It is emphasized in all literature and announcements that no child is ever turned away because of lack of funds.

A summer camp for diabetic children must include not only an adequate recreational staff with a program director and counselors especially qualified in various fields, such as swimming, canoeing, baseball, archery, riflery, tennis, dramatics, music, nature studies, and so on, but also a medical staff large enough for proper diabetes supervision and maintenance of health. In each camp, the medical staff consists of a senior physician who visits the camp once or twice a week, a resident physician constantly on duty, three graduate nurses, one dietitian, and three laboratory technicians.

Campers are served weighed diets in the dining hall. The 24-hr. urine is collected and measured daily, then tested for sugar and diacetic acid, and the number of grams of sugar excreted per 24 hr. is calculated. Qualitative tests for sugar in urine are done before each of the three meals and at bedtime. Twice weekly capillary blood sugar tests are made before each of the three meals. The aim of treatment is to obtain as satisfactory blood and urine tests as possible without causing frequent or severe insulin reactions.

The educational value of the camps cannot be over-estimated. Some of this takes place without formal presentation but simply through the mingling of the child with his fellows. In his family, school, and community, the child with diabetes is apt to feel set apart and lonely. If he follows the directions given him he is denied sweets, pastries, soft drinks, and so on, which constitute some of the cherished pleasures of childhood. This may lead in time to bitterness and to a "don't care" attitude. Many a diabetic child who has been maladjusted psychologically has been helped tremendously by a stay of a few weeks at a camp at which he finds other children on special diets and taking insulin. He finds that they

Camps for diabetic children in the United States and Canada. Approximate locations are listed below.

1. Camp Banting, Ottawa, Ontario
2. Illahee Lodge, Cobourg, Ontario
3. Clara Barton Birthplace Camp, North Oxford, Massachusetts
4. Elliott P. Joslin Camp, Charlton, Massachusetts
5. Camp Nyda, Burlingham, New York
6. The Pennsylvania Camp for Diabetic Children, Spring Mount, Pennsylvania
7. Camp Midicha, Columbiaville, Michigan
8. Camp Ho Mita Koda, Newbury, Ohio
9. Camp Za-Ni-Ka, Catawba Island, Ohio
10. Camp Waldruhe, Dayton, Ohio
11. Camp Kno-Koma, Cowen, West Virginia
12. Tennessee Camp for Diabetic Children, Soddy, Tennessee
13. Camp Seale Harris, Mobile, Alabama
14. Camp James Whitcomb Riley, Martinsville, Indiana
15. Camp Sidney Cohen, Delafield, Wisconsin
16. Camp Whitcomb, Merton, Wisconsin
17. Holiday Home Camp, Lake Geneva, Wisconsin
18. Camp Lake of the Woods, Kansas City, Missouri
19. Camp Lions' Den, Imperial, Missouri
20. Camp Sioux, Arvilla, North Dakota
21. Camp Floyd Rogers, Nebraska City, Nebraska
22. Camp Sweeney, Gainesville, Texas
23. Camp Manitou, Watrous, Saskatchewan
24. Anglican Church Camp, Edmonton, Alberta
25. Camp Cadicasu, Calgary, Alberta
26. Camp Banting, Seattle, Washington
27. Camp Priscilla White, Seattle, Washington
28. Camp Highbanks, Forest Grove, Oregon
29. Camp Whitaker, Badger, California
30. Uni-Betic Camp, Seven Oaks, California

engage in practically all the activities that their non-diabetic brothers and sisters do. Confidence, enthusiasm, and hope are inspired. There can be no doubt that the summer camp program throughout the world is extraordinarily worth while.

Use of the Sulfonylureas in Juvenile Diabetes

Some fifteen years ago at the time of the introduction of the sulfonamides in the treatment of bacterial infection, it was noted in the laboratory that certain of these had a hypoglycemic effect when given to animals. Not much came of this until 1954 when in Germany a sulfonamide derivative called BZ 55, or carbutamide, was studied. During the past two years German clinicians have subjected this preparation to clinical trial with thousands of diabetic patients. A second compound, tolbutamide or Orinase, has also been used extensively. Trial of both these drugs began in the United States late in 1955 and the experience here has confirmed the findings of the German workers. In normal men and animals, these sulfonylurea compounds lower the blood sugar

some 30 or 40 per cent in 4 hr. after administration of a suitable, single dose. Furthermore, satisfactory control of hyperglycemia and glycosuria may be obtained in 50 to 70 per cent of selected middle-aged or elderly diabetic patients. Carbutamide was withdrawn from clinical trial in November, 1956, however, because of a relatively high incidence of toxicity. Tolbutamide is still under investigation and has not been released for sale in pharmacies.

It was early found and has been amply confirmed since, that the sulfonylureas are not effective in children or in adults with the unstable juvenile type of diabetes. Naturally one wonders why, and it is possible that the answer to this question may be helpful in understanding the basic nature of diabetes. One idea at present is that the sulfonylureas work, at least in part, by stimulating the beta cells of the islets of Langerhans to secrete or release insulin. If this is correct, then no result should be obtained if no functioning beta cells are present in the pancreas. The lack of response in children is consistent with the current belief that in children after the first three or four years when diabetes has become well established, little or no functioning islet tissue is present. There is, however, one strange and most interesting phenomenon which is seen not infrequently in diabetic children. If vigorous therapy with diet and insulin is instituted shortly after the onset of diabetes, the diabetic condition may appear in some children almost to have been cured. For days, weeks, and at times even months, children may be maintained on little or no insulin. Eventually the true character of the diabetes reasserts itself so that one never completely omits insulin but continues it throughout the remission of diabetes although at times only in a token dose.

This situation has been described in some detail because when one gives a test dose of one of the sulfonylurea compounds to large numbers of diabetic children, one finds that in only a few is any fall in blood sugar obtained. In most juvenile patients the blood sugar either remains stationary, falls only slightly, or rises somewhat in the 4 hr. after a test dose of the drug. However, in a very few children, a fall in blood sugar of more than 20 per cent and even as great as 40 to 50 per cent of the initial value is obtained. The interesting fact is that these positive responses are found in those children in whom the diabetes is of short duration, less than three years or usually less than one year, in whom one may suppose there are still functioning beta cells (*Fig. 1*). These findings support on the one hand, the belief that the sulfonylurea compounds act, at least partly, by stimulating the production or release of insulin, and on the other hand, the belief that early in the course of juvenile diabetes the insulin-producing capacity of the pancreas may be great only to fall to low levels within months or years, approaching the state of "total diabetes."

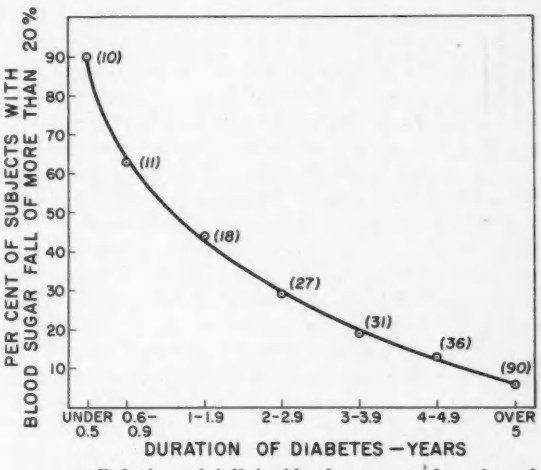

FIG. 1. *Relation of fall in blood sugar to duration of diabetes as determined in 223 children 4 hr. after a single dose of carbutamide (BZ 55) or tolbutamide (Orinase). Figures in parentheses indicate the number of subjects at each interval of duration of diabetes.*

Since it is not known how the sulfonylurea compounds may stimulate the pancreas, it is best at the present time not to attempt to treat children with these drugs, lest more harm than good be accomplished.

The Outlook

What then does the future hold for the diabetic child? In answering this question, various characteristics of juvenile diabetes must be kept in mind; (a) the unstable and variable character of the diabetes which makes control difficult; (b) the difficulty of obtaining cooperation of the patient as regards adherence to a restricted diet or even a reasonably constant diet and physical activity from day to day in persons in this age group; (c) obstacles imposed by the psychologic difficulties created by the diabetes and its treatment; and (d) the fact that the late complications of diabetes may come at a most awkward time in the life of the erstwhile diabetic child. It is one thing to have serious vascular complications at age seventy, twenty years after the onset of diabetes at age fifty, and quite another thing to have them at age thirty-five, twenty years after onset of diabetes at age fifteen. To be blind or nearly blind, to have hypertension, and to have chronic renal disease so advanced that the outlook as regards life itself must be a guarded one is a tragic situation for a person in his thirties or forties.

These matters will govern the future of the child with diabetes tomorrow as today. Added to this is the fact that the number of young people grows along with that of the general population. It has been estimated that at present there are in the United

States probably about 25,000 diabetic children under the age of fifteen years or about one in 2,000 in the total child population. It is possible that the number approaches 30,000. Furthermore, it has been estimated that there are probably an additional 60,000 or more persons with diabetes alive whose disease began in childhood, thus making a total of about 90,000 juvenile or erstwhile juvenile diabetics.

It has been estimated that as of the middle of 1956 there were over 50 million children in the United States under the age of fifteen. With an increasing number of children and adolescents, there will of course be an increasing number of young people with diabetes. One hopes to protect them not only from diabetic coma and other acute complications, but also from the disasters of complications of the nervous and vascular systems some fifteen, twenty, or twenty-five years hence. At present the indication is plain that maximal success can be attained only by careful planning for the future with the supplying of an adequate diet, proper dose of insulin, physical activity suited to the individual, and constant education of the patient and his family. Statements to the contrary notwithstanding, experience has shown that this can be done, while still maintaining a happy and satisfying life for the child.

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BIOGRAPHICAL NOTES FROM THE HISTORY OF NUTRITION

Sir Hugh Platt—1552–1611

Sir Hugh Platt joins our list of names in the history of nutrition because he wrote *Sundrie New and Artificall Remedies Against Famine* (1596) and also one of the earliest cookery and household recipe books published in England (1602) titled *Delightes for Ladies, to adorn their Persons, Tables, Closets, and Distillatories: with Beauties, Banquets, Perfumes and Waters.* More is known about his writings than about Platt himself.

He was the third son of Richard Platt, a well-to-do London brewer who owned country estates. His mother was Alice Birchells (or Birstles) of Cheshire. He studied at Cambridge and obtained his B.A. degree in 1571. He became a member of Lincoln's Inn, as was the custom for young gentlemen of the day, but instead of practicing law, he devoted himself to literary studies and published a collection (anthology) of philosophic writings and poems. However, his interest was soon captured by the natural sciences and mechanical inventions, and his later life was devoted to the study of domestic economy and especially agriculture.

One of his inventions was the fire ball, made of coal mixed with clay and other substances and worked up into a ball. For his inventiveness and writings, he was knighted by James I at Greenwich on May 22, 1605. He married twice. There were several children by his first marriage, and two sons and five daughters by the second, but personal data of this family are lacking.

At that time, England had a population of about 4½ million, and the Elizabethans were vitally concerned about food supply. Problems of food production and preservation and how to feed all the people seem to have been Platt's main concern. His book, *Sundrie New and Artificall Remedies against Famine*, was written because of the extremely wet season and consequent loss of crops. There was fear that people would starve and there might be riots. He suggested that beans, pease, and beechmast be boiled in two or three different waters until the unsavory taste was removed; they should then be dried, ground, and used alone or with one-fourth part wheat flour and made into bread. He also recommended the use of starch roots, suggesting that they be sliced and dried and made into bread. Centuries were to pass before agriculture was sufficiently developed in England to render such remedies unnecessary.

Platt's *Delightes for Ladies* must have carried information Elizabethan housewives wanted, for it went through at least thirteen editions in fifty years. It told how to preserve foods; candy flowers; make sweet cakes without spice or sugar (parsnips were used); dry fruit in the sun; make candles; prepare perfumes, dentifrices, face powder, and hand water; and "to make a most delicate white salt for the table." It comes as somewhat of a surprise to find that the Elizabethan lady made cosmetics for herself—at least she could, if she wished to follow Platt's directions for "sweet powders, oyntments, beauties, etc."

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Studies with the Cotton Rat

Oat Hull Fractions and the Development of Dental Caries[1]

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LAST YEAR an attempt was made to present a concise but current look at the relationship of diet to dental caries development in the experimental animal (1). It is recognized that the dental caries problem is not the result of a single cause and that many factors are involved in the development and prevention of this disease. One cannot escape the conclusion, however, that the diet is directly or indirectly one of the most important factors in relation to the cause and prevention of the carious process in teeth. Its contact with the teeth, its effect on the characteristics of saliva, its physical form, and its chemical composition all play a part in the dental caries syndrome.

Zepplin *et al.* (2) demonstrated that a natural diet containing foods found frequently in the diet of man and containing only 17 per cent sucrose produced a dental caries score equivalent to that in cotton rats fed cariogenic Ration *802* which contained 67 per cent sucrose. Zepplin's natural diet contained considerable amounts of cereal products. The reports of Osborn and Noriskin (3) and of Stephan (4) indicated that the use of processed cereals is an important factor in the increased incidence of dental caries found in peoples who were previously free of the disease. Constant *et al.* (5) developed a highly cariogenic ration which consisted of 50 per cent oatmeal, 18 per cent sucrose, and 32 per cent dried whole milk. Continued exploration of these diets indicated that whole grains, corn, wheat, or oats were much less cariogenic than their processed products, corn flakes, wheat flakes, or oatmeal. Later, Constant *et al.* (6) were able to show that the increased cariogenicity of processed cereals occurred with oat products at the stage of removal of the hulls. This observation led us to an extensive study of the possible anticariogenic substances which might be present in oat hulls.

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Experimental Procedure

Two types of cariogenic diets were used, a semi-purified diet (No. *802*) and an oatmeal ration (Diet *875a*[5]) which contained 50 per cent oatmeal (groats), 32 per cent dried whole milk, and 18 per cent sucrose. These rations were supplemented with the appropriate vitamins and minerals necessary to provide all known essential nutrients. Littermate weanling cotton rats, caries susceptible, were distributed among the various lots of rats used on any given experiment. They were housed in individual screen bottomed cages with a single rat per cage and given food and water *ad libitum*. Each experimental period covered fourteen weeks unless otherwise indicated. At the close of each experiment the animals were sacrificed and their teeth scored and evaluated according to the method of Shaw and co-workers (7).

Approximately one-fourth of whole oats consists of hulls. The incorporation of oat hulls into the oatmeal basal diet (cariogenic—No. 875a) to simulate whole oats required a substitution of 12.5 per cent hulls which replaced a like amount of oat groats in the basal ration. When oat hulls were used as a supplement to Ration *802*, they replaced an equivalent quantity of sucrose. When extracts were employed as dietary supplements, they were included at levels calculated to be equivalent to that supplied by 25 per cent oat hulls. All extracts used in these experiments were made at room temperature.

Results

The data presented in Table 1 show clearly that the inclusion of finely ground oat hulls reduced the incidence and extent of dental caries in the cotton rat and that this effect was produced with both types of ration, i.e., semi-purified or natural. The anticariogenic action of oat hulls was not due to its fiber content since the substitution of Celluflour for the oat hulls in equivalent amounts was without effect. Further, preparations of lignin, hemicellulose, and crude fiber from oat hulls contained no anti-

TABLE 1 Summary data of the effects of oat hulls fed as a portion of a natural (875a) and semi-purified diet (802) on dental caries in the cotton rat

RATION AND SUPPLEMENTS	NUMBER OF ANIMALS	CARIES SCORE	
		Average incidence	Average extent
Basal diet 875a-oatmeal (cariogenic)	11	24 ± 1.5	49
Basal diet 875a + 25% Celluflour	11	21 ± 2.0	52
Basal diet 875a + 25% ground oat hulls	10	9 ± 2.0	11
Basal diet 802	6	23 ± 1.0	47
Basal diet 802 + 10% Celluflour	6	21 ± 2.0	54
Basal diet 802 + 10% ground oat hulls	6	14 ± 1.0	21
Basal diet 802 + 25% Celluflour	6	24 ± 2.4	54
Basal diet 802 + 25% ground oat hulls	6	13 ± 1.2	19

cariogenic activity (Jenkins and Phillips [8]). Hence the anticariogenic action of oat hulls was not one of forthright dilution. The inclusion of 10 per cent oat hulls in Ration *802* was sufficient to reduce the dental caries score to approximately the same degree as the higher level of 25 per cent oat hulls. These data suggest that the anticariogenic factor, if not fiber itself, was needed in rather small amounts.

Since oat hulls are harsh and brittle, several experiments were conducted to determine the effect of the modulus of grinding on the anticariogenicity of oat hulls. Different lots of oat hulls were ground to pass thru a 10-, 20-, or 60-mesh screen and tested against the effects of ball-milled oat hulls. The dietary effects of such processed oat hulls were then assayed with the cotton rat in the usual manner and were compared with negative control animals fed the cariogenic-oatmeal diet. Animals in this series of experiments were sacrificed at either fourteen or ten weeks. The results indicated that the protective action of oat hulls was not an abrasive brushing effect on the teeth (Table 2). These data, therefore, suggested that the anticariogenic activity of oat hulls was not a physical one. It was noted that the grinding modulus of a 20-mesh screen or finer was necessary for the best results, although a 10-mesh modulus gave a measurable reduction in dental caries.

Since Constant *et al.* (6) observed a marked effect of the mineral content of the diet, the next study was made to determine if the ash of oat hulls might perchance be anticariogenic. The data in Table 3 demonstrated that the ash content of oat hulls, either fed alone or in combination with a mineral mix or with Celluflour, was ineffective in controlling the development of dental caries in the cotton rat. Analysis

TABLE 2 Effect of particle size of hulls on caries

DIET	NUMBER OF ANIMALS	AVERAGE CARIES INCIDENCE	REDUCTION
Basal oatmeal	4	25 ± 2	—
Basal + 25% oat hulls			
10 mesh	4	20 ± 1.7	20
20 mesh	4	15 ± 2	40
60 mesh	4	12 ± 1.2	52
Floured	4	13 ± 1.8	48

TABLE 3 Effect of oat hull ash on caries production

RATION AND SUPPLEMENTS	NUMBER OF RATS	CARIES SCORE	
		Average incidence	Average extent
Oatmeal basal ration (cariogenic)	6	29 ± 1.6	60
Oatmeal basal ration + oat hull ash	5	28 ± 2.0	56
Oatmeal basal ration + mineral mix	6	27 ± 2.0	63
Oatmeal basal ration + 25% oat hulls	6	19 ± 1.3	33
Basal ration only	3	28 ± 1.6	58
Basal ration + 25% Celluflour + 1.7% ash	3	27 ± 1.5	82

of oat hulls for fluorine indicated less than 1 p.p.m.; thus it would appear that the anticariogenic activity of oat hulls could not be attributed to its fluorine content. Spectrographic analysis did not reveal the presence of vanadium. Other trace elements found to be semi-quantitatively higher in the hull portion of oats were ineffective against caries.

With the elimination of these various anticariogenic possibilities, our efforts were then focused on the possible existence of other inhibitory factors resident in oat hulls. Neutral solvent extractions with ether, water, and ethanol resulted in a diminished anticariogenic activity of the hulls. On the other hand, the extracts were found to have some activity (Table 4). Later, with more effective extractions, greater activity was obtained.

THE BACTERIAL THEORY

Because an animal assay of an anticariogenic factor is a long, tedious, and slow process, it was necessary to develop a rapid assay which could be correlated with the caries assay in the rat. Since our data (9) support the bacterial theory in the development of dental caries, any anticariogenic agent should also inhibit the growth and development of the caries-producing microflora of the mouth. Accordingly, certain extracts were tested on oral microorganisms from carious cotton rat molars.

The procedure followed was the technique of Wakeman *et al.* (9), which in brief consists of extracting and grinding the teeth and making serial

TABLE 4 Effect of certain extracts of oat hulls on dental caries production

RATION AND SUPPLEMENT	NUMBER OF RATS	CARIES SCORE	
		Average incidence	Average extent
Oatmeal basal ration	6	27 ± 1.9	64
Oatmeal basal + 25% ground oat hulls	6	12 ± 2.3	19
Oatmeal basal + ROR, EtOH, H_2O extracts	6	20 ± 1.7	43
Oatmeal basal + extracts + residue	5	19 ± 1.3	33
Oatmeal basal + extracted residue	6	13 ± 2.0	22
Oatmeal basal ration	4	25 ± 1.6	58
Oatmeal basal + 25% oat hulls	3	11 ± 0.7	16
Oatmeal basal + EtOH extract	4	20 ± 1.6	45
Oatmeal basal + extracted residue	3	16 ± 2.1	35
Oatmeal basal ration	6	30	74
Oatmeal basal + $NaHCO_3$ extract	6	21	35
Oatmeal basal + $NaHCO_3$ extract-dialized	6	25	47
Oatmeal basal + 25% oat hulls	5	14	21

dilution counts in a carrot, liver-agar medium in shake culture tubes. Appropriate additions of the various extracts were tested in this manner. After 72 hr. incubation at 37°C., counts were made of the number of colonies and the amount of acid produced. This was estimated by the reaction of the contents of the tube toward alizarine red sulphonate.

In this manner it was demonstrated that the ethanol extract contained substances which inhibited the growth of oral microflora as indicated by the diminished number of colonies and the decreased amount of acid produced. Since acid-producing microorganisms appear to be involved in cariogenesis in some manner and since the ethanolic extract inhibited acid production, it appeared that the protection afforded the animals by the extract was very likely due to an antimicrobial action against acid-producing microorganisms. Hence a pure strain of *Lactobacilli* was used. As expected, the ethanolic extract inhibited growth.

In order to follow the further separation of the active substances, the growth and acid production of *Lactobacillus acidophilus* in yeast dextrose-broth was used as the assay. Appropriate amounts of the various fractions obtained by solvent fractionations and chromatography were aliquoted into dry culture tubes and dried in a vacuum oven. Nine cc. Difco microinoculum broth were added to culture tubes, the *p*H adjusted when necessary, and the total volume was brought to 10 cc. The tubes were sterilized by autoclaving and inoculated with a 24-to 48-hr. inoculum of *Lactobacillus acidophilus*, var. Farr. After an incubation period of 72 hr. at 37°C., the amount of acid produced was determined by potentiometric titration with 0.1N sodium hydroxide to the bromthymol blue end point (*p*H 6.7).

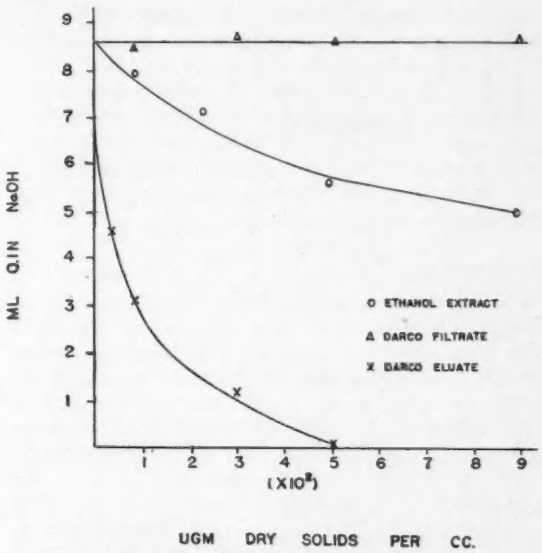

FIG. 1. *Growth of* L. acidophilus *in ethanol extract, Darco eluate, and Darco filtrate.*

By the use of this assay, it was found that the bactericidal activity could be concentrated, and when it was tested by the cotton rat assay, it was also anticariogenic. On the basis of these results, extractions and concentration studies were undertaken with animal confirmation assays made only on selected key fractions.

It was found that the factors sought were extractable with ethanol, acetone, methanol, or aqueous alkali. The extracts were concentrated to a thick tar under vacuum, dissolved in dilute alkali, adsorbed and eluted by the use of Darco G-60, and finally concentrated in ethanol. Figure 1 shows the relative inactivity of Darco G-60 filtrate, slight activity in ethanol extract, and considerable activity in the concentrate from Darco G-60. Isolation and characterization studies are still in progress.

Preliminary studies indicate that the anticariogenic activity of oat hulls is due to several acidic compounds which possess strong bactericidal properties, some of which have been assayed with positive caries inhibition in the cotton rat. Purification by paper partition chromatography or column chromotography indicates the protective activity is in part due to a group of phenolic acids, furan type acids, and others. A white crystalline compound has been isolated and identified by chromatographic, melting point, and infra-red absorption spectra data as palmitic acid. It appears that the palmitic acid is only a part of the active molecule, although the

acid itself exhibits bactericidal properties and its anticariogenic potential had been recognized earlier.

It has been shown that an ether, ethanol, or aqueous alkaline extraction of oat hulls reduced the anticariogenic activity of oat hulls and that the anticariogenic principles were resident in the extracts. Concentrates of such extracts have been assayed by cotton rats and by microbiologic test. They were found to be active in each case.

Summary

A series of experiments have been conducted to determine the activity of certain factors present in oat hulls which are effective anticariogenic agents. It has been shown that the fiber *per se*, ash of oat hulls, and dilution with hulls were without effect in controlling the development of dental caries in the cotton rat. Inclusion of dietary oat hulls at levels of 10 to 25 per cent of the ration exerted a marked anticariogenic effect against dental caries. Fine grinding of the hulls facilitated the favorable protective activity. Further extracts of oat hulls have been prepared and tested which actively reduced the dental caries score when fed to cotton rats.

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Objectives of Nutrition Education

At Cape Girardeau, Missouri, a special nutrition education program in the public schools was inaugurated in December 1955 with a survey of the eating habits of fourth, fifth, and sixth grade children. The results of this survey were used as a basis for teaching nutrition, integrating it into the general teaching curriculum.

In May 1956, a follow-up survey showed that the number of good diets had increased 22 per cent while the number of children having diets very much below recommendations had dropped from 50 to 34 per cent. Milk consumption had increased 7 per cent, and 13 per cent fewer children were eating sweets. However, consumption of soda had increased 5 per cent.

In the report of the project, "Nutrition Program of the Cape Girardeau Public Schools," recently released by the Missouri State Department of Education, the following fifteen general objectives of nutrition education are listed:

1. Understand what constitutes an adequate diet.
2. Recognize that good nutrition is essential to good health and good diet is not possible without good eating habits.
3. Know the nutritive value of individual foods and the supplemental values of a variety of foods.
4. Develop a liking for nutritious foods.
5. Use judgment in the purchase of foods to insure a nutritious diet even on a limited food budget.
6. Understand the relationship of mental health and achievement to good eating habits.
7. Know how to safeguard health values of foods through proper methods of storage, handling, and preparation.
8. Avoid the potential hazards of improper food sanitation.
9. Support public health measures intended to improve sanitation in public eating places.
10. Appreciate table courtesy and social customs relating to the use of foods.
11. Relate food consumption specifically to human health in many ways. For example, food excesses as well as insufficiencies may result in malnutrition and impairment of health.
12. Adjust food intake to body needs.
13. Appreciate that agricultural production, transportation, distribution, family income, and education are all important factors in raising the national nutritional level.
14. Realize that for the good of our total society everyone should be well nourished.
15. Participate in community planning to provide adequate diets for everyone.

Constructive Labor Relations[1]

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WHAT ARE the determinants of constructive labor relations? This is a difficult question when one considers the rich variety and complexity of American employer-employee relationships today. Yet I make bold to suggest that there are certain first principles that have validity and meaningful application in *any* employer-employee relationship. I suggest further that perhaps the two greatest barriers to the successful application of these principles are: (a) the unexplored assumption that management must operate differently in union and non-union contexts, and (b) the current pre-occupation with the manipulative techniques of "human relations."

I sincerely believe that constructive labor relations depend on certain fundamental rules of interpersonal conduct and understanding rather than upon the presence or absence of a union or the existence of an impressive list of employee welfare programs.

My own experience has been primarily concerned with labor relations in manufacturing plants. I do not claim any first-hand knowledge of the problems of professional dietitians, either as supervisors or as employees, nor am I acquainted with the specific nature of the work environment in which you operate. However, I am convinced that the principles and policies suggested in this paper are generic in character. As such, they should be capable of meaningful application to your personal situations, whether you are a supervisor or an employee and whether or not you are operating under a union contract.

Common Goals of Management and Labor

Let me be explicit as to the term "constructive labor relations" and its determinants. In my judgment, constructive labor relations may be said to exist when supervisors at all levels and employees in a particular enterprise are in agreement on four basic goals and are working together in reasonably harmonious fashion to achieve these goals, utilizing mutually acceptable procedures.

The first common goal must be an increasingly productive enterprise whose success will benefit all concerned, whether it be a hospital, a restaurant, a factory, a coal mine, or a government department.

A second basic goal must be achieving success for the enterprise in question in a manner that will preserve and enhance the dignity of the individual by encouraging whenever feasible democratic participation in decision-making and by providing procedures to insure against arbitrary or inequitable treatment by supervision.

A third important goal must be a joint determination to minimize sources of conflict and irritation and to maximize opportunities to promote and expand areas of mutual interest and profit. Success in reaching this goal requires a high degree of emotional maturity on the part of supervisors and representatives of employees (whether it be union leaders or informal employee leaders in a non-union situation). An emotionally mature leader is one who possesses and practices tact, patience, and understanding. Such a leader believes in a problem-solving approach. He or she is personally well enough adjusted to handle problems rather than hate them. Such a leader has the ability to know and to understand the motivations and compulsions operating on the parties with whom he or she is dealing.

Finally, a fourth basic goal is the achievement of a steadily higher level of personal well-being for supervisors and supervised alike. This concept of personal well-being recognizes individual desire for economic security and economic advancement. It also recognizes the universal human desire to be respected as an individual and to be treated fairly and equitably in all relationships.

I respectfully suggest that any business or governmental enterprise whose employees believe in and work for these four basic goals will enjoy constructive labor relations. Specific procedures utilized to achieve these goals may vary considerably, depending in part on the size and nature of the enterprise and whether it is a union or non-union relationship. For example, in a small establishment formal pro-

[1] Presented at the 39th Annual Meeting of The American Dietetic Association in Milwaukee, on October 12, 1956.

cedures may not be essential to implement the objectives just outlined. However, as the number of employees and the span of supervision increase, the need for regular channels of communication and discussion becomes apparent.

The Positive Approach

The key to success lies in the adoption by management of a *positive approach* to labor relations policy.

Too often in the past, management has reaped a harvest of ill-will and poor labor relations by taking a negative or even an antagonistic approach in dealing with its employees. Unions were bitterly opposed instead of being accepted as legitimate instruments of employee representation. Non-union firms often remained so by instituting a policy based on fear and coercion that could leave only a legacy of hate and mistrust.

Today the climate is fundamentally changed. The right to organize and the right to bargain collectively with management through representatives of the workers' own choosing are protected by law. So also is the right to refrain from self-organization and collective bargaining. The present state of the law underlines the important fact that it is up to the employees themselves to determine whether they wish to be represented by a labor organization.

A prudent management seeking a constructive relationship with its employees will not intrude on this decision. It will forego its liberalized right of free speech under the Taft-Hartley Act.

If Company X's employees reject unionism, then management is free to develop its own policies and procedures for implementing the basic goals outlined earlier. However, if a majority of Company X's employees in a unit appropriate for purposes of collective bargaining designate Union Y as their authorized representative, then the management of Company X must be prepared to operate in a setting structured in part by the institutional requirements of Union Y, and by the terms of the contract negotiated between the parties.

It is at this point that the management approach becomes of critical importance. Will it be positive or negative?

The Law of Cause and Effect

My own experience confirms the validity of the proposition that management generally gets the type of union it deserves. When the union enters the picture, if management adopts a negative, grudging, defensive, hostile attitude, it is certain to encounter excessively militant, aggressive, and irresponsible union leadership.

On the other hand, if management accepts the union as an integral part of the labor relations picture, if it recognizes that its employees may properly have dual loyalties and does not seek to compete with the union for the single-minded devotion of its employees, if it bargains out a contract in good faith and demonstrates its willingness to administer that contract in the same spirit—then, over a period of time if not at once, such a management will generally be rewarded in kind by intelligent and mature union leadership.

In specific instances, it is true, a well-intentioned management may be burdened for some time by having to deal with incompetent or hostile union representatives. However, in the great majority of cases, I believe it to be a correct assumption that the type and character of union leadership are closely related to the attitudes and policies of management.

Initiative Lies with Management

Implicit in the foregoing is the proposition that the initiative and responsibility for constructive labor relations rests with management. This is equally true in a union or non-union relationship.

In the first place, the overwhelming majority of American union leaders and collective bargaining agreements do recognize management's right to manage. American unionists accept the private enterprise system and the profit motive. They are not interested in "taking over" or even in sharing in the direction of enterprise. They fully recognize that a business cannot be run like a debating society.

In the main, American union leaders seek to condition and limit management's right to manage through contract provisions at those points where the exercise of managerial discretion has a direct impact on the worker on the job. The classic example is the discipline function. Most collective bargaining agreements treating the subject recognize discipline as a management function and require only that discipline be given for good and just cause. The integrity of the management function to discipline remains unimpaired by such a contractual limitation. No fair-minded employer, whether union or non-union, would wish to discipline employees except for good and just cause.

In most of the subject matter areas of labor relations, it is management that must assume the initiative in administering policy, whether the policy be one laid down in a contract or, in the absence of a union, formulated unilaterally by management.

It is management that hires, promotes, transfers, lays off, recalls, gives or withholds merit increases, demotes, and discharges. Wages and salaries may be set by contract or fixed by management, but it is management that administers the plan.

Productive Management Policies

On some of these matters, the control of management may be exclusive and unchallengeable, even in a union setting. On others, particularly in unionized concerns, management will exercise administrative initiative subject to challenge through the grievance procedure. How policy is administered is of critical

importance in seeking constructive labor relations.

More specifically, what sort of management policies and procedures will be productive of constructive labor relations? If the four basic goals set forth earlier are accepted in substance as desirable, the content of policies within that framework can be filled in rather readily to suit the needs of the particular enterprise involved. Specific policies should be formulated in terms of what we know are fundamental desires and needs of workers everywhere in relation to employment, subject of course to the capacity of the particular enterprise to meet such requirements.

Workers desire "fair" wages. Their concept of "fair" is usually a comparative one, relating to what they know is being paid in other concerns.

Workers desire to have their individual dignity and sense of personal worth respected and protected. This implies that management policies as to wages, promotion, discipline, and treatment on the job must be uniform and non-discriminatory in concept and application. Supervisors must be instructed to administer these policies fairly and equitably.

Workers are also interested in employment security. Many workers are more interested in steadiness and continuity of employment than in high wages as such. This consideration dictates that management policy should be devised to promote stability in employment so far as the nature of the particular enterprise permits. I am also prompted to suggest that many companies might do well to relax their present emphasis on comparative ability and give greater weight to length of continuous service in reference to layoffs, recalls, and promotions. Finally, the worker's interest in employment security suggests the desirability of management's doing all in its power to provide employees with an adequate complex of fringe benefits.

My own experience has been limited in the main to unionized concerns. I have always been intensely interested in the combination of factors (personal, economic, psychologic, and institutional) that determine whether the relationship between union and management is a constructive one or a poor one.

Causes of Industrial Peace

My own study and experience have caused me to reach certain conclusions (1) that are substantially similar to those of the authors of a recent series of case studies of the "causes of industrial peace" initiated by the National Planning Association (2). The NPA financed a survey of twelve company-union relationships in a variety of industries that had enjoyed conspicuously successful and constructive relations in recent years to find out what made them tick. Nine factors and characteristics were found to be common to all of these union-management relationships. The committee notes that each of the nine ". . . refers to attitudes and approaches which the parties themselves have consciously adopted or helped to achieve" (2).

The complete list of nine factors follows:

(a) There is full acceptance by management of the collective bargaining process and of unionism as an institution. The company considers a strong union an asset to management.

(b) The union fully accepts private ownership and operation of the industry; it recognizes that the welfare of its members depends on the successful operation of the business.

(c) The union is strong, responsible, and democratic.

(d) The company stays out of the union's internal affairs; it does not seek to alienate the workers' allegiance to their union.

(e) Mutual trust and confidence exist between the parties. There have been no serious ideologic incompatibilities.

(f) Neither party to bargaining has adopted a legalistic approach to the solution of problems.

(g) Negotiations are "problem-centered"; more time is spent on day-to-day problems than on defining abstract principles.

(h) There is widespread union-management consultation and highly developed information-sharing.

(i) Grievances are settled promptly, in the local plant whenever possible. There is flexibility and informality within the procedure.

Labor Harmony in a Non-Union Setting

I submit that these nine factors constitute an excellent formula for constructive and harmonious relationships in a union situation. I suggest also that these nine factors can be useful and instructive to management in a non-union setting with certain modifications. To emphasize this point, I have adapted the NPA's nine points into a formula for management and employees in a non-union context.

In the absence of a union, I believe that management and its employees can achieve and maintain constructive labor relations under the following conditions:

(a) There is full acceptance by management of the rights of its employees as individuals to enjoy fair and equitable treatment by supervision and to receive "fair" wages and other economic benefits to the extent of management's ability.

(b) The employees fully accept private ownership and operation of the enterprise by management. Each employee recognizes that his or her individual welfare depends on the success of the business in question.

(c) The employees are "responsible" in the sense that they recognize their obligation to return a fair day's work for a fair day's pay.

(d) Management will stay out of the individual employee's personal and private affairs. It will not seek to utilize the employment relationship as a weapon for influencing the employee's freedom of choice in any area beyond the proper bounds of supervisory authority.

(e) Mutual trust and confidence exist between management and its employees. There are no serious ideologic incompatibilities.

(f) Neither management nor employees will adopt a legalistic approach to the solution of problems in the relationship.

(g) Discussions between management and employees will be "problem-centered" in an effort to discover and eliminate sources of friction, discontent, and conflict.

(h) Although not obligated to do so, management is willing to consult freely with employees on problems concerning the employment relationship and is interested in sharing information with its employees as to the state of the enterprise in question.

(i) Grievances of employees are heard and settled promptly by management in terms of a clear and intelligible statement of management policies governing all aspects of the employment of relationship.

A cynic might regard the foregoing as an impractical collection of Pollyanna platitudes. One must regretfully admit the continued existence of a considerable number of cynics within the ranks of both management and labor. Yet I am firmly convinced that constructive labor relations can be achieved and maintained by the approach suggested—*and that to do so is good business.*

Recognize the Dignity of the Individual

The relationship between high wages and high productivity is significantly positive. The relationship between steady production and fair-minded treatment of employees is significantly positive. Furthermore, the compatibility of successful unionism with high net profits to business has been demonstrated over and over again in recent years.

In my judgment, we are approaching in the United States a new high level of maturity and understanding in employer-employee relations. Our knowledge has been improved greatly in recent years by the findings of social psychologists in particular as to individual and group motivation in the work environment. These findings point significantly in one direction. Policies and procedures designed to maintain and enhance the dignity of the individual and to promote fairness and equitability of treatment will produce constructive labor relations. On the other hand, policies and procedures designed on the assumption that man is interested solely in material needs and will accept authoritarian control if he has a full stomach have been proved false. It is just not good business today to pay low wages and to enforce compliance by fear.

The measure of success in the future will be the extent to which companies and unions recognize the dignity of the individual as a "pluralistic person." Clark Kerr, Chancellor of the University of California at Berkeley, defines a pluralistic person as one who is willing to work with divided loyalties and set his own pattern of activities, rather than have it set for him by a single institution, whether it be the business firm, a union, or government. Kerr's strictures on the importance of protecting the individual in his freedom of choice are directed primarily at corporations and unions. His four imperatives on preserving the area of liberty are as follows (3):

> In the area of liberty, there are probably four imperatives: First, freedom of access of the worker, without discrimination, to corporation and union alike. Second, an opportunity for him to participate in setting the most important relationships between employer and employee on the one hand and union and member on the other—in the first case through the right to select bargaining representation and in the second through the right to vote freely in elections. Third, a right to judicial review of disciplinary action whether by employer or union.
>
> Fourth, and this is a much neglected consideration, freedom from control or even dominant influence by the corporation or union in the non-job phases of life. The span of control or influence of company and union should not extend beyond the employment relationship itself, except as they may be forced into wider social functions by the inability or unwillingness of other agencies to undertake such functions reasonably adequately. Only thus can the worker have the opportunity really to shape his own life; the chance and stimulus to work out a pattern for himself; in a word, the full capacity to be a distinct individual.

The obligation to respect the dignity and personal status of the individual employee, whether he be supervisor or rank-and-file, is the critical one in determining the success or failure of labor relations policy in any enterprise. This obligation is especially critical in a non-union situation where management has full power.

In such circumstances, a management that recognizes the necessity of shaping its policies and procedures in such a way as to enable the individual employee to exercise his or her "full capacity to be a distinct individual" is a management that deservedly will enjoy and profit from constructive labor relations.

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Labor in the Dietary Department[1]

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Some of the factors which may affect labor time in the hospital dietary department include: bed capacity, type of ownership, number of meals served, peripheral services offered by the dietary department, number of modified diets served, use of selective menus, and labor turnover. A survey of 175 midwestern hospitals with respect to these factors as they relate to labor time is reported.

MORE EFFECTIVE control of labor time in the hospital dietary department is a major concern of those responsible for the management and operation of the food service. Evaluation of the labor time is needed to develop standards for determining the required man-hours of labor. A basic approach used for such evaluation has been to determine rate of production in terms of the amount of labor time required per meal served.

Published reports of labor-time studies in dietary departments of hospitals are limited. In fifteen modern hospitals, there was no relation between size of hospital and number of meals served to personnel; there was no consistency in the amount of labor and supervision used to produce a meal (1). A study of ten hospitals showed that, in general, the labor time expended per meal decreased as the number of meals served increased (2). In an earlier study, however, there was no evidence of a relationship between number of meals served and time required (3).

These studies have indicated that certain factors might affect dietary labor time. Some can be measured objectively: type of patient food service; length of the work week; use of a split or straight shift; use of a selective menu for all patients; number and kind of special services provided, such as nourishments, formula room supervision, or coffee service; rate of labor turnover; and the amount of employee training provided.

Other factors, not to be ignored, but more difficult to measure and compare are the type and amount of equipment available, physical layout or building arrangement of the institution, work habits and experience of dietary personnel, the efficient scheduling of employees, and the amount and kind of supervision.

The purpose of this study was to determine, through statistical analysis, whether there are significant differences in scheduled per-meal labor time in the dietary departments of general short-term hospitals when classified according to either bed capacity, type of ownership, or number of meals served daily. If the scheduled labor time for dietary personnel in hospitals similarly classified is similar, a standard or criterion for the efficient control of labor time could be established. Such a standard might be useful as a basis for evaluating the rate of production in an existing department or for determining the number of man-hours required when organizing a new department.

Method of Procedure

Data were obtained from a random sample of hospitals in the East North Central region of the United States. Only general hospitals serving short-term patients were included in order to decrease variables. Information necessary for drawing the sample was obtained from the Administrators Guide Issue of *Hospitals* (4). The 838 general short-term hospitals in the region were classified into six groups on the basis of bed capacity and into four groups on the basis of type of ownership (Table 1).

To insure a valid sample, the statistician suggested

[1] Published with the approval of the Director, Wisconsin Agricultural Experiment Station. Data are taken from a thesis submitted by Eleanor Halter in partial fulfillment of the requirements for the degree of Master of Science. Presented at the 39th Annual Meeting of The American Dietetic Association in Milwaukee, on October 12, 1956.

TABLE 1 Classification and sample distribution of general short-term hospitals in the East North Central Region

BED CAPACITY	TYPE OF OWNERSHIP								TOTAL	
	Local government		Church and non-profit		Profit		Federal government			
	Total hospitals	Hospitals in sample	Total hospitals	Hospitals in sample	Total hospitals	Hospitals in sample	Total hospitals	Hospitals in sample	Hospitals	Hospitals in sample
0–49	64	21	158	52	40	14	1	1	263	88
50–99	62	21	129	43	5	1	1	1	197	66
100–199	23	8	173	54	2	2	4	4	202	68
200–299	5	2	90	31	0	0	2	2	97	35
300–399	0	0	36	12	0	0	2	2	38	14
400–5000	12	12	23	23	0	0	6	6	41	41
Total.....	166	64	609	215	47	17	16	16	838	312

that 33 per cent of the hospitals in each category should be included; a 60 per cent return was anticipated. Because only 50 hospitals came under the ownership group of federal government or in the bed-capacity group of over 400 beds, all were included in the sample.

To obtain the information needed, a questionnaire was developed using some of the recommendations made by Tuthill and Donaldson (2). When reporting data, hospitals were asked to use average figures for the previous year for bed capacity, patient census, meal census, and total hours scheduled per week, provided no gross changes had occurred. The questionnaire also included space for indicating the type of food service, number of hours worked by both full- and part-time dietary personnel, length of the work week, use of a split shift, type of special services provided, rate of labor turnover, and amount and kind of employee training used.

Total labor time and direct labor time per meal served were calculated from each questionnaire returned. Total labor time included the hours scheduled for all professional, clerical, and non-professional personnel employed by the dietary department. Direct labor time included only the hours scheduled for the non-professional dietary personnel directly concerned with food production, preparation, and service. Since the questionnaire requested average number of personnel employed and the scheduled weekly hours for both full- and part-time personnel, it was assumed that time for all relief employees was included.

Daily average meal count included the number of meals served to patients, staff, students, personnel, and guests; modified diets were included in the total meal count. Infant formulas, nourishments, and coffee service were not counted in the total meal census. They were recognized, however, as factors which might increase labor time.

For each hospital the weekly scheduled labor hours for dietary department personnel were totalled. The total of the hours for the week, including those for both full- and part-time personnel, was divided by seven to determine average total labor hours scheduled per day. This figure was converted into minutes per day. The total labor minutes expended per meal served were then determined by dividing total scheduled minutes per day by average daily total number of meals served. This same procedure was used for determining the average per-meal time for both total and direct labor.

Findings and Discussion

Of the 312 questionnaires mailed, 175 were returned and used.

The average direct labor time per meal served ranged from 3.5 to 29.6 min. for all hospitals; the mean was 14.9. The average total per-meal labor time ranged from 4.2 to 32.6 min. with a mean of 17.1. Ranges and means of per-meal labor time for hospitals when they were classified according to bed capacity, type of ownership, and number of meals served daily are shown in Table 2.

STATISTICAL ANALYSES

The hypotheses tested were that there were no differences among groups of general short-term hospitals in the amount of scheduled labor time per meal served when the hospitals were classified according to:

(a) Bed capacity.
(b) Type of ownership.
(c) Total number of meals served daily.

An analysis of variance was computed for both direct and total scheduled labor minutes per meal for the groups in each of the three classifications. The analyses indicated no significant differences at the 5 per cent level of probability between groups in the means of either the direct or total scheduled labor time per meal when the hospitals were classified according to bed capacity, type of ownership, or number of meals served daily (Table 3). Bartlett's test of homogeneity of variance (6) was computed for direct labor-time to detect the variability of the time within the various groups for each of the three classifications. Results indicated no differences at the 5 per cent level of probability; variances within each group were estimates of the same common variance.

TABLE 2 Range and mean of direct and total per-meal labor times, depending on classification of hospital

GROUPING WITHIN CLASSIFICATION	NUMBER OF HOSPITALS	DIRECT LABOR TIME		TOTAL LABOR TIME	
		Range	Mean	Range	Mean
Classification According to Bed Capacity					
		min./meal	*min./meal*	*min./meal*	*min./meal*
0–49 beds	30	7.1–22.0	14.0	9.1–25.7	15.8
50–99 beds	37	5.7–29.6	14.9	6.9–31.1	17.1
100–199 beds	42	4.0–24.3	16.0	5.3–27.1	18.1
200–299 beds	25	8.8–24.6	14.9	10.5–27.1	17.0
300–399 beds	10	3.5–22.3	13.3	4.2–25.4	15.6
400–5000 beds	31	3.6–28.5	14.5	4.3–32.6	17.7
Total	175	3.5–29.6	14.9	4.2–32.6	17.1
Classification According to Type of Ownership					
Local government	32	8.8–22.0	14.2	11.0–26.4	16.8
Church and non-profit	121	3.5–29.6	15.1	4.2–32.6	17.2
Profit	9	9.1–24.3	15.4	9.1–27.1	18.0
Federal government	13	7.8–18.3	14.0	12.8–21.5	17.0
Total	175	3.5–29.6	14.9	4.2–32.6	17.1
Classification According to Total Meals Served Daily					
0–99 meals	19	7.1–19.7	13.8	9.1–21.8	15.5
100–199 meals	20	8.6–23.9	15.6	9.4–25.7	17.8
200–299 meals	23	4.0–29.6	14.5	5.3–31.1	16.5
300–599 meals	31	4.8–24.3	15.9	5.9–27.1	17.9
600–999 meals	24	9.9–24.6	16.1	11.0–27.1	18.3
1000–1499 meals	21	8.0–22.3	14.2	10.0–25.4	16.4
1500–2499 meals	17	3.5–28.5	13.9	4.2–32.6	16.7
2500–8500 meals	20	3.6–21.0	14.1	4.3–24.6	17.1
Total	175	3.5–29.6	14.9	4.2–32.6	17.1

DIRECT AND TOTAL LABOR TIME

The difference between the means of direct and total labor time per meal served for the 175 hospitals was 2.2 min. The range in difference between direct and total labor time in all the hospitals studied was from 0 to 10.9 min. For a majority of individual hospitals, however, there was a difference of approximately 2 min. between total and direct labor time per meal. In the small hospitals, it was not unusual to find identical time for both direct and total labor, since the food service was directed and operated by one or two employees and did not include the services of professionally trained or clerical personnel.

When the difference between total and direct labor time greatly exceeded 2 min., the hospital usually provided training or internships for nurses, doctors, dietitians, and other professional groups and more professional and clerical personnel were employed by the dietary department. In some hospitals, where total labor time exceeded direct labor by a wide margin, it was recognized that the greater difference might have been due to a misinterpretation of job titles or classifications on the questionnaire. Some employees were considered professional whereas the services they performed were actually direct labor.

FACTORS AFFECTING PER-MEAL LABOR TIME

Hospital dietitians and administrators are interested in an average or typical labor time per meal as a measure of efficiency in food production. Usually a high per-meal labor time would indicate inefficiency and a low time would be evidence of efficiency. However, such a criterion cannot be used alone without knowledge of and respect for all factors which might affect production rate in any one dietary department.

To determine what constituted an extremely high or low per-meal labor time for the hospitals when classified according to the number of meals served daily, the mean of total labor time for each group plus or minus the standard deviation was used as the typical range. Any figure above or below this range was then considered an extreme. The means, standard deviations, and typical ranges are shown in Table 4.

The total per-meal labor time in 20 hospitals was less than the mean minus the standard deviation; in 25 hospitals, the total time was more than the mean plus the standard deviation. The total labor times for the other 130 hospitals studied were between 11.2 and 23.0 min.

To determine possible reasons for extremely low or high total labor time in the forty-five hospitals,

TABLE 3 Analysis of variance of direct and total per-meal labor time depending on method of classification of hospital

SOURCE OF VARIATION	DEGREES OF FREEDOM*	MEAN SQUARE†	
		Direct per-meal labor time	Total per-meal labor time
Classification According to Bed Capacity			
Between hospitals	5	21.34	25.53
Within hospitals	169	20.12	22.62
Classification According to Type of Ownership			
Between hospitals	3	11.43	3.64
Within hospitals	171	20.31	23.04
Classification According to Total Meals Served Daily			
Between hospitals	7	19.82	19.22
Within hospitals	167	20.16	22.85

* Total hospitals, 174.

† Non-significant; probability below 5 per cent level.

several factors were considered: percentage occupancy, percentage of modified diets served, use of selective menus, use of a split shift, number of hours in the work week, special services provided, use of an in-service training program, and yearly turnover rate.

It has been assumed that percentage of beds occupied might affect per-meal labor time since hospitals generally maintain a complete staff of dietary personnel regardless of monthly variation in patient census. Average percentage occupancy was determined on the basis of bed capacity in relation to average daily patient census. Some administrators assume that labor time for personnel is used more effectively when the percentage occupancy is 85 or above. Of the twenty hospitals with a low per-meal labor time, thirteen had an occupancy ranging from 85 to 100 per cent. Of the twenty-five whose labor time was high, occupancy for eight ranged from 86 to 92 per cent and for thirteen, the range was from 59 to 85 per cent; four did not report average census.

Preparation and service of a large number of modified diets has been considered a factor which might increase labor time. It has been suggested that 25 per cent of the total patient census is a reasonable proportion to have on modified diets (7). In the twenty hospitals with low labor time, only five had more than 25 per cent of the patients receiving modified diets. Fifteen with high labor time had more than 25 per cent on modified diets.

The use of selective menus for all regular diets has also been considered a factor which might increase labor time. In six of the twenty hospitals with low time, selective menus were used; of the twenty-five with high labor time, five used selective menus.

Other general assumptions concerning hospital labor time have been that the use of a 40- or 44-hr. week increases the per-meal labor time and that the use of a split shift decreases it. Of the hospitals with

TABLE 4 Mean and standard deviation of total per-meal labor time for hospitals classified according to total meals served daily

MEALS SERVED DAILY	MEAN OF TOTAL LABOR TIME	STANDARD DEVIATION	MEAN ± STANDARD DEVIATION
	min./meal	*min.*	*min./meal*
0–99	15.5	3.3	12.2–18.8
100–199	17.8	4.2	13.6–22.0
200–299	16.5	5.1	11.4–21.6
300–599	17.9	5.1	12.8–23.0
600–999	18.3	4.7	13.6–23.0
1000–1499	16.4	3.8	12.6–20.2
1500–2499	16.7	5.5	11.2–22.2
2500–8500	17.1	5.8	11.3–22.9

low per-meal labor time, seven had a 40-hr. week, four used a 44-hr. week, and nine used 48 hr. or more per week for personnel involved in direct labor. In the group with high labor time, sixteen reported a 40-hr. week, four scheduled a 44-hr. week, and five utilized a 48 hr. work week. Five of the twenty hospitals with low labor time used a split shift for direct labor and in some cases used it with a 48-hr. week. Of the hospitals with high labor time, only two used a split shift; in the remaining twenty-three, all personnel involved in direct labor worked a straight shift.

Service of coffee for personnel and guests appeared to be a standard practice in the hospitals studied; a majority of the hospitals with both low and high labor time per meal provided it. The use of dietary personnel in the formula room may also have influenced labor time. It was not always possible to determine how much time personnel worked in the formula room when they also helped in other areas of the food service. In one hospital with low labor time and in six with high labor time, dietary personnel worked in the formula room. When determining per-meal labor time for the production and service of meals, the time employees or other personnel work in the formula room should be deducted from total labor time expended.

It is assumed that training and supervision should decrease per-meal labor time. Individual and informal on-the-job training which is valuable in increasing employee efficiency was not reported. Nine of the twenty hospitals with low labor time reported some type of in-service training; nine of the twenty-five with high labor time also had such programs.

Yearly turnover rate might be expected to influence labor time because new personnel require training and experience before reaching maximum productive efficiency. Percentage of yearly turnover in this study was determined by dividing the number of full- and part-time personnel hired in one year by total number of personnel usually employed. Seven hospitals with low labor time reported no turnover. Three had more than 40 per cent labor turnover; the other ten reported between 8 and 40 per cent. Eleven hospitals with high labor time had

more than 40 per cent turnover. The turnover in eleven of this same group was between 7 and 40 per cent; one reported no turnover and two did not report data on turnover. In general, the turnover rate seemed to be higher for larger hospitals and those with high labor time.

Summary and Conclusions

Using a questionnaire, data were collected from 175 of a sample of 312 hospitals selected at random from the 838 in the five states in the East North Central region. Direct and total scheduled per-meal labor times were determined from these data.

Analyses of variance, when applied to the means of both total and direct scheduled per-meal labor time for hospitals classified according to bed capacity, type of ownership, or number of meals served daily, indicated no significant differences between groups of hospitals for any of the three classifications. As a further indication of the great amount of variation in direct labor time within each group of hospitals so classified, Bartlett's χ^2 test of homogeneity of variance was applied.

The range for direct scheduled per-meal labor time for the 175 hospitals was 3.5 to 29.6 min.; the mean was 14.9. The range of total scheduled per-meal labor time was 4.2 to 32.6 min., with the mean at 17.1. The labor time for 74 per cent of the hospitals was between 11.2 and 23.0 min. per meal; for 11 per cent, the time was below and for 14 per cent above this range.

To determine possible reasons for the extremes in total per-meal labor time in forty-five hospitals, several factors were considered. After tabulation and interpretation of these factors, it was not possible to formulate conclusive statements regarding the effect of any one factor in increasing or decreasing total per-meal labor time. Other factors or a combination of factors, not possible to evaluate objectively in this research, apparently had influenced labor time.

Contrary to assumptions which have been made, bed capacity, type of ownership, or number of meals served daily did not provide a criterion on which to base the requirements for labor time. The data did not substantiate the generally accepted principle that labor time per meal decreases as number of meals served increases.

It is recognized that there is considerable variation in the operation and management of hospital dietary departments as well as in the physical plants provided; some may be due to circumstances beyond control of the director of the department. Perhaps, however, this study indicates that directors of hospital dietary departments need to scrutinize and analyze the labor time used by dietary personnel to determine whether such time is being or can be controlled more effectively.

A standard or criterion to use as a basis for the efficient control of labor time was not established in this research. However, the data which were analyzed and presented can serve as a guide for those who wish to compare and evaluate scheduled labor time for existing hospital dietary departments or to determine the time required for a newly organized department. When using the data as a guide, each person should consider factors in the department which might affect the amount of labor time required and determine the extent to which such factors might result in deviation above or below the figures reported in this study.

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Who Is Who in Dietetics and Nutrition?

A new biographical directory, *Who's Who of American Women*, devoted entirely to women is scheduled to appear in 1958. Credit for the original idea belongs to Elizabeth B. Borden, Director, Women's Archives, Radcliffe College. As a recorder of women's activities, she felt that obscurity should not continue to cloud the accomplishments of women today as in the past. Mrs. Borden brought her idea to the attention of the publishers of *Who's Who in America* and persuaded them to assume responsibility for this new production.

While the names of 2,500 women of achievement now appear in *Who's Who in America*, it is planned that at least an additional 15,000 will be included in the new directory.

To be sure that recognition is given to those who have contributed importantly to the field of nutrition and dietetics, your nominations are being invited. Will you send the names of approximately ten women of prominence in our profession, their addresses, and why you consider them distinguished to Marquis-Who's Who, Inc., 210 East Ohio Street, Chicago 11? Deadline for nominations for *Who's Who of American Women* will be December 1, 1957.

Planning for Staff Development[1]

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TRAINING CAN be divided into four distinct phases:

(a) Pre-service training, including those work study experiences that we call internships.

(b) Induction training—induction to the specific job and the specific organization or agency.

(c) On-the-job training.

(d) Graduate and other advanced off-the-job training.

We frequently hear the term "in-service" training. This usually refers to the second and third phases of any training program, namely, induction and on-the-job training.

All of these phases are inter-related in that each phase is built on the preceding phases. Since the training that any specific individual has had in any of these four areas is likely to be quite different from that which any other person has had, training thus takes on an individual aspect.

Pre-Service Training

Pre-service training is likely to involve formal education, plus a certain amount of work experience. Minimum standards and requirements are set forth and the programs of training institutions are approved by organizations such as The American Dietetic Association. It is noted that one of the original purposes of your organization was "to offer leadership in establishing high standards of preparation in dietetics." Also, some of the activities of your association are designed to influence the pre-service training of your employees. One of these comprises the membership requirements that you have set up which include certain amounts of training and certain recommended courses. You also have activities in the area of supervision of internships. These are aimed, of course, at providing beginning employees with an optimum amount of preparation.

A progressive training program is usually tied in with a positive recruiting program. No respectable organization sits idly by and selects its employees from those who come to the organization seeking employment. A positive program requires that the administrators of the agency or organization determine the present and future personnel needs, the quality of personnel desired, and then set out to obtain it. We should not put ourselves in the position of the sixth grade teacher who spends her energies in complaining because the pupils coming to her did not learn their fractions in the fifth grade and in berating the fifth grade teacher. The fact is that there *are* opportunities to change the level of proficiency of the beginning employee, and part of our training efforts should be devoted to this area. However, the most proficient employee still needs induction and on-the-job training and, in many cases, advanced off-the-job training, as will be indicated later.

Pre-service training is a responsibility of all those interested in training, and it cannot be ignored. It is recognized, of course, that the induction and on-the-job phases of the training program are more closely related to us and our organization and that these programs are more directly controlled by us, but we always start at the proficiency level of the beginning employee.

Organizational Plan for Training

Before looking at induction and on-the-job training further, let us discuss briefly the organizational plan for training. First, training is a line responsibility (referring to the usual breakdown of line-and-staff responsibilities), and the person directly responsible for training is the person who is the supervisor of the person being trained. This might be the person who has the title of supervisor and supervises dietitians in the lower grades in the organization or, it might be the director or administrator who supervises those who bear the title of supervisor.

As was indicated, training is a line responsibility.

[1] Presented at the 39th Annual Meeting of The American Dietetic Association in Milwaukee, on October 11, 1956.

There are several reasons for this. One is that the immediate supervisor is the person who knows her worker best. She knows her motives, her attitudes, her work habits, her problems, and all the other personal items and characteristics which are directly related to training. In most cases, the immediate supervisor is the person who has authority for hiring and firing these people, or at least recommends the hiring and firing of these people. Then, too, the immediate supervisor is in a position to transmit attitudes regarding training to the person being supervised. Of most importance, however, is the fact that the supervisor is responsible for the results of the work of this person and, thus, cannot escape the responsibility for her training.

Many organizations have people employed who bear the title "training director," "training officer," or "personnel officer," and who are assigned certain training responsibilities. These are staff positions, and people bearing this title function in a staff capacity. They assist the supervisor who has direct responsibility for training those working under her. The training director can plan the general training program and can assist the supervisors to adapt it to the specific situations involved in training specific individuals for specific positions. The training director can also prepare and assemble training materials and help the supervisors in understanding and using these materials. In addition, he can assist with evaluation of the results of training. The job description of the supervisor should spell out the training activities for which she is responsible. The job description for the training director, training officer, or personnel officer should likewise spell out his duties, including relationships with the supervisor. It goes without saying that these two job descriptions should be compatible.

Many organizations, of course, do not have a training director, in which case the supervisor is more or less on her own. In any case, she is responsible for training those under her supervision.

Induction Training

What I am going to say about induction and on-the-job training applies, in part at least, to the training of non-professional workers, as well as to that of professional workers.

Induction training is the most important phase of our training program, in that understandings, habits, and attitudes developed during the first days and months of employment are apt to persist. It involves the familiar principle of learning by doing. However, we feel that this "learning by doing" can be more valuable if it is closely supervised and if there is ample opportunity for discussion between the supervisor and the trainee. This tends to assure that the maximum number of lessons are learned from each experience. The purpose of this, of course, is to reduce to a minimum the time between employment and the time when the new worker has a thorough and competent understanding of his job and the skills necessary to fulfill it. Much of this induction training is carried on between the supervisor and the trainee on an individual basis.

In this regard the JIT, or Job Instruction Training, developed by various agencies of the federal government during World War II, is still sound. This involves four basic steps: preparing the employee, presenting the job, trying out the performance, and the follow-up.

We have used the technique of assigning to the trainee, early in the induction training experience, relatively simple jobs that can be quickly completed. We then assign increasingly difficult responsibilities as the new worker is capable of undertaking them. In every case, we encourage our trainers to use the four steps in the JIT process. In Step 1, "Preparing the Employee," we emphasize the mental and physical readiness of the employee to undertake the task. We attempt to put the new worker at ease; we delineate the specific job; we find out what he knows about the job; we attempt to develop an interest in the job and a desire to learn and to place him in the correct learning position with the necessary tools and equipment.

When we have gone through these processes, we are then ready for Step 2, "Presentation of the Job." Here it is important not only to *tell* what the job is and how to do it, but it is important to *show*, illustrate, and demonstrate. We use the questioning technique to make sure the trainee understands the job. Of course, it is better if one step can be presented at a time, with no more information being presented than the person can master at one time. Every job has some key points which must be accomplished in sequence. It is best if these can be emphasized to the exclusion of the refinements and short-cuts which the experienced worker utilizes. Then, once the basic steps have been mastered, the refinements and short-cuts can be added.

Step 3 in the JIT process is "Trying out the Performance." We have the employee do the job under our supervision. We correct any errors and, if possible, we have him do the job again. Following the completion of the job, we have him explain the job and outline the key points connected with it. Here, too, we can question him about the what, the how, and the why. We have him continue doing the job until we know that he knows how and is able to do it.

"Follow-up" is the fourth JIT step. At this point we put the worker on his own, but we tell him where he can get help. We check frequently with him, and we encourage questions. We taper off our coaching as he acquires the abilities and skills necessary to do the job on his own. The JIT instruction cards have a little slogan at the bottom which says, "If the employee hasn't learned, the supervisor hasn't taught."

An additional phase of the induction training program involves such items as understanding the philosophy, the objectives, the standard operating procedures, and other similar items in the given institution, organization, or agency. Many of these items can be handled in group situations, particularly if there is more than one person starting at the same time. We have found that this type of instruction can be most valuable to the beginning employee. We think that it has considerable psychologic value in that one person realizes that there are others who are also just starting with the organization who have many of the same problems.

It should be pointed out that induction training is for a specific position. It might be for a new worker to the organization, but it also applies to an experienced worker who is being given a new responsibility. In other words, a dietitian who has been with the organization for a number of years and who is being assigned supervisory duties should have the benefit of induction training in her new assignment, even though she is an experienced employee as far as the organization is concerned.

Shortly after beginning the induction training period, the new employee should study his job description or write a job description if one has not been prepared previously. This job description provides the basis for completing the induction training and for the future on-the-job training. However, just reading or even writing a job description is not enough to be sure that the person whose job it covers understands and comprehends the statements or that he understands how to go about applying his talents in carrying out the job. We are suggesting that the person performing the job must be involved in deciding the specific function of this job and in determining the training needed, within the framework prescribed by the organization.

On-the-Job Training

The dividing line between the induction phases of the training program and the on-the-job phases of the training program is sometimes quite arbitrary. However, in planning a training program the two are quite different. One is involved with getting started, the other with keeping up-to-date and with increasing proficiency. In our organization we have arbitrarily set the time at two years. An employee who has been with us more than two years is considered an experienced employee, while one who has been with us less than two years is still considered to be in the induction training phase. Some individuals, of course, pass through this training period more rapidly than others.

The on-the-job phases of the training program are probably the easiest to talk about, but the most difficult to put into practice. The basis of the training program again should be the job description of the individual. As indicated previously, on-the-job training is involved with keeping up-to-date and with increasing the proficiency of the employee. This includes changes brought about by technologic advances in the professional field, as well as understanding the changes taking place within the organization or agency, such as administrative and procedural changes.

In addition to increasing her proficiency in the specific areas covered by her job description, a professional employee should be interested in her general education and improvement which will enable her to become an increasingly competent member of the organization as well as help her become an increasingly competent person in a specific job. The former may be referred to as the general education and improvement of the individual. In both of these cases, namely the improvement of the person and her ability to do her specific job and in the general education and improvement area, an appraisal of the person and her work is most important. This can probably best be accomplished by the individual and her immediate superior working together. In other words, the on-the-job phases of the training program should not be planned merely around what the supervisor thinks the employee needs, any more than it should be built entirely around what the employee thinks she needs. A joint cooperative arrangement between the supervisor and the individual should provide a workable plan that is agreeable to both. Both should be interested in improving the ability of the employee in such areas as work methods, work planning, time management, and human relation skills, in addition to the professional areas of dietetics and nutrition.

Graduate Training

Graduate training, or other off-the-job training, is frequently the place where general education and improvement occurs, along with professional improvement in the area of dietetics. This probably should be a cooperative plan also. You may have some employees you would like to encourage to take such additional training. Others, you probably feel, are already working at their maximum potential and should not be encouraged to do graduate or other off-the-job advanced training.

This type of training is frequently tied in with promotions to a higher rated position. If such is the case, of course, the administrative group—the director or administrator—should be involved in making decisions in this area.

The Supervisor as a Teacher

It should be apparent by this time that the job of the supervisor is in many ways synonymous with that of a teacher. A teacher must know the information she is to teach and how to teach, so that the behavior of the pupils is changed as a result of the teaching.

This is exactly the position of the supervisor. She must be competent in the professional area of dietetics and nutrition, as well as in the area of teaching others so that their behavior is changed. In regard to changing behavior, we generally consider behavioral changes in three areas:

(a) Changes in knowledge or things known.
(b) Changes in attitudes or things felt.
(c) Changes in skills and abilities or things done.

The latter, the things done, is usually the measuring stick by which we evaluate the training program. The supervisor is responsible for the results of the work of those whom she supervises, and her job is to change the attitudes, the knowledge, and the skills of these people so that they can produce the desired results and do the best job they are capable of doing. Such change is a result of learning. Teaching is the initiation, guidance, and evaluation of learning. Thus, the person who initiates, guides, and evaluates this change is a teacher.

It is trite to say that the supervisor sets the example with the people whom she supervises. It is not trite, however, to suggest that the supervisor, too, needs a job description; that the supervisor, too, needs to evaluate her progress in each of the areas spelled out by her job description and to make plans for the improvement needed; that the supervisor, too, needs to have a positive plan for keeping up-to-date and increasing her proficiency as a dietitian and as a teacher.

This is not the place to discuss keeping up-to-date in the area of dietetics and nutrition. We might, however, discuss briefly what we need to do to keep up-to-date as a teacher. An understanding of the basic principles of learning and teaching is an essential base for proficiency in this area. An understanding of the ever-growing field of knowledge of group techniques, sometimes called group dynamics, is important. The field of supervisory techniques themselves is a subject of numerous books and articles. Seminars, discussions, professional meetings, and other learning experiences of this type are frequently used by supervisors to keep up-to-date in these areas. Membership in such organizations as the Adult Education Association, which publishes the magazine *Adult Leadership*, is another avenue. Inviting sociologists, psychologists, and educators to meet with supervisors is another important method. There is much we do not know about human beings, their inter-relations with one another and how they learn, but more is being added to the stock pile of knowledge daily. Our recent advances in the area of group techniques are evidence of the progress that we are making.

Those supervisors who, in counsel with their immediate superiors, recognize the need for increasing their proficiency in this area and plan to improve their ability as supervisors, are those who will probably find that the people working under their supervision are growing and developing personally and professionally and are increasingly more productive.

Insecticides in Meat Fat and Milk

Insecticides made of chlorinated hydrocarbon and organic phosphorus are fat-soluble, and when sprayed on cattle or sheep may be absorbed through the skin and stored in the fatty tissues. They also may be stored in the fat when present as contaminants of feed, and they may be excreted in the milk of dairy cows exposed to them in sprays or feed. Therefore, before an insecticide can be recommended for use on livestock or for the control of insects on pasture or forage crops, studies must be made to determine whether the dosages used will lead to milk and meat contamination, and if residues are produced, how long they will persist.

Such studies have been conducted at Kerrville, Texas, during the last six years through the cooperation of entomologists, veterinarians, and chemists of the U. S. Agricultural Research Service.

Single spray treatments of DDT, TDE, and methoxychlor applied at 0.5 per cent concentration to beef cattle caused storage of the insecticide in the fat. Lindane at a concentration of 0.03 per cent could not be detected.

Multiple spray treatments with lindane and methoxychlor at three-week intervals caused no greater storage in the fat than a single treatment. On the other hand, multiple treatments with other chlorinated hydrocarbon insecticides—chlordane, gamma chlordane, DDT, dieldrin, heptachlor, methoxychlor, TDE, Strobane, and toxaphene—at two- or three-week intervals resulted in slight to moderate increases in the amount of storage. A 0.5 per cent malathion spray applied at weekly intervals caused no storage in the fat.

When insecticides were fed to beef cattle and sheep as a contaminant to their feed at dosages likely to occur as residues on forage crops, all except methoxychlor were stored in the fat. The order of their storage was: aldrin, dieldrin, BHC, DDT, chlordane, lindane, endrin, heptachlor, toxaphene.

All of the chlorinated hydrocarbon insecticides and malathion were excreted in the milk of dairy cows following the spray treatments. Dieldrin caused the greatest contamination, followed in order by DDT, TDE, Dilan, toxaphene, Strobane, methoxychlor, Perthane, and malathion.

Training Employees in Work Simplification[1]

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MANAGEMENT MUST seek ways to use all resources more efficiently and effectively. Your labor resource is perhaps the most critical and the most challenging to you as an administrator. Do you believe that by effective training, the potential contribution of your workers can be more nearly realized? If work methods are to be improved, what provision should be made to train the workers in work simplification? What are the specific objectives of such training? How can such training be accomplished most effectively? How can the outcomes of training be measured? The last question is of special concern in any research regarding training.

The evidence which we can present in regard to these questions is based primarily on two sources—first, the experiences of others in training workers and in conducting work simplification programs (1–19), and second, the outcomes of an experiment in work simplification training which we conducted in one of our food service units at The Iowa State College. In this experiment attention was given to planning, conducting, and interpreting work simplification training for food service employees below the level of supervisors. Consideration of research methodology for similar investigations was an important phase of the study.

Objectives of Work Simplification Training for Workers

The primary objective of work simplification training for workers is not to develop skill in improving methods, but rather to help provide an understanding and to develop attitudes which will facilitate the process of methods improvement. Increased efficiency can result from improved work methods developed only when the methods are installed and continually used by the workers. It has been proposed that new methods will be more readily accepted and used if employees affected by the change understand why the work should be done in a particular way, or if they have developed or have helped to develop the improved methods.

After a review of the experiences of others in work simplification in various types or organizations, it was concluded that such training should contribute to the following objectives:

(a) To provide an understanding of work simplification which will make the workers receptive to analysis of their jobs, to methods proposed by management, and to adoption and use of the methods prescribed.

(b) To improve management-labor relations and increase the interest of employees in their work.

(c) To stimulate employees to make suggestions for improving work methods.

(d) To help the workers to improve those methods of work which are determined by them.

(e) To lower costs.

(f) To give impetus to a continuing program of work simplification.

Preparing Materials for Training and Testing

Before the experiment was planned, the work simplification generalizations on which the training program was to be based were developed and stated as guides.

Since it was believed that visual materials could be used to advantage in the training classes, available materials were reviewed to determine those which might be appropriate for use. Five motion pictures were selected; only one, however, met all of the criteria which had been set up for selection of the visual materials. This was the film "Skill Counts at the Sandwich Counter" produced by the Wheat Flour Institute and the National Restaurant Association. A small booklet which related work

[1] Presented at the 39th Annual Meeting of The American Dietetic Association in Milwaukee, on October 12, 1956.

simplification to homemakers' tasks was also selected.

The visual materials developed for use in the classes included sixty-seven color slides and an illustrated booklet. One group of nineteen slides depicted the procedure followed to simplify a food service job. The remainder portrayed specific ways in which the various guides to work simplification could be applied to quantity food production and service. The illustrated booklet was designed to aid in: (a) introducing the plan for the work simplification classes, (b) presenting the guides to work simplification, and (c) providing continuity from one class to the next.

As a basis for determining the workers' understanding of work simplification, four tests were developed to be administered to the employees before and after the training program. In these tests, work situations were presented, and the employees were asked to make suggestions for simplifying the methods used. Since the workers varied in their ability to read and write, the situations were presented by means of motion pictures in individual interviews, and the workers' suggestions were made orally. It is difficult to secure valid and reliable measurements of the effect of training methods on human behavior; the task is more complex when paper-and-pencil tests cannot be used, as was the case in the present research. The test situations were planned so that there would be possibilities for improving the methods by application of the guides to work simplification. These tests were administered as part of the research procedure in order to interpret the outcomes of the training; they were not a part of the training program *per se*.

The Training Program

The total period of the experiment, including the tests and observations made to interpret the outcomes, lasted approximately twenty-six weeks. Various work processes were analyzed before the training classes were held. Following the training classes, improved methods were developed for some of these work processes. The analyses and improvements provided on-the-job examples of how a process could be improved by applying work simplification generalizations. They also gave an opportunity to determine employees' reactions to having their work methods studied—the extent to which they would make suggestions for improving methods, and whether they would adopt and use new work methods proposed.

Seven work simplification classes were conducted for the employees in slightly over three weeks. The visual materials previously selected and developed were used. Each class was repeated three times to make it possible for twenty-three of the workers to attend.

Outcomes

A variety of outcomes resulted from the training program. Progress was made in improving work methods. Employees who participated in or had direct contact with work process studies gave excellent cooperation when work methods were being analyzed and improved methods developed. Those who were asked to adopt new work methods did so, at least during the times observed. It is not known, however, to what extent this cooperation was the direct result of the training program. Support of the program by the management is believed to have been an important influence in assuring the workers' cooperation. Employees made suggestions, both in the classes and during the work process studies, for improving work methods. They also evidenced an understanding of the viewpoint of management. Of the twenty-three workers, eighteen indicated that they believed the work simplification classes had been beneficial.

During the seven classes it was evident that the visual materials facilitated the presentation of information and aroused the employees' interest. These materials seemed to aid learning, although there was no specific evidence to substantiate this point. Even though visual materials directly related to food service work are probably most effective in training food service employees, some motion pictures concerned with aspects of work simplification which only indirectly related to food service were also used and seemed to be effective. In the 30-min. classes, motion pictures were more satisfactory if they were short enough to allow time for interpretation and discussion. There are problems in the use of certain visual materials when training food service employees; it is believed, however, that these problems can be overcome by organization and planning.

Various analyses made of the test scores indicated that the employees' ability to apply work simplification generalizations was greater after the training program. The tests developed for evaluating the employees' understanding of work simplification, however, were not entirely satisfactory. There was some support for the belief that employees who participated in or had direct contact with work process studies made greater progress toward the objectives for the program than those who did not, although it was not possible to make definite conclusions in this regard.

Generalizations for a Successful Training Program

As an outcome of this research, generalizations were formulated relating to training and specifically to the use of visual materials for training food service employees in work simplification. Those which, on the basis of the present experiment and the results and recommendations reported in the literature,

appeared to be generally accepted were then stated as *assumptions*. These were:

1. A training program designed to change the skills, attitudes, and/or interests of employees is more successful if it is supported by top management and has the active support of the levels of management to whom the employees are directly responsible.

2. A training program is more effective if the representatives of management to whom the employees are directly responsible participate in the administration of the training program.

3. A professional teacher from outside the organization may be used to advantage in an employee training program, but management should have responsibility for the training program.

4. A training program is more effective if management representatives to whom the employees are directly responsible have a thorough understanding of the skills, attitudes, and/or interests proposed to be developed by the training.

5. A training program is more successful if designed to fulfill a need. If employees do not recognize the need for training, such a program is more effective if it provides for developing such recognition.

6. The objectives of training are more likely to be achieved if interpreted to the employees in terms of their personal incentives for learning.

7. Visual materials are most effective in a training program if they are executed so that the ideas to be conveyed are clearly and forcefully presented. They are most effective if designed to convey a specific idea or ideas, if basic principles of color and/or design are applied, and if conditions or elements which distract from the intended purpose are eliminated or minimized.

8. By the use of classes, training may be provided that would not or perhaps could not be accomplished by individual on-the-job training. Class training is proposed to supplement, not replace, individual training. But, for training in group meetings or classes, careful advance planning is necessary.

9. Employees are more likely to accept and cooperate in an experimental or training program if the program is so introduced that the importance of the workers' participation is recognized and their security is not challenged.

10. A work simplification program is most effective if one management person, within an organization or division of the organization, provides leadership, and all members of management and labor support the program.

11. In a work simplification program, the services of a specialist in work simplification or methods improvement may be used to advantage to analyze work methods and help develop improved methods. The support of all members of management and labor is necessary for effective utilization of such a specialist.

12. A work simplification training program for employees is effective only if management is willing to give objective consideration to the suggestions of employees.

Resulting Hypotheses

The following *hypotheses* need further investigation before acceptance:

1. If such visual materials as appropriate motion pictures and color slides are available, their use will save time for the trainer and they are as effective as actual demonstration in teaching work simplification.

2. Proper use of appropriate visual materials in work simplification classes for employees facilitates communication between the trainer and employees, decreases training time, and helps to gain and hold the employees' interest.

3. Use of visual materials to show work situations before and after improvement of work methods promotes interest in a work simplification program.

4. Visual materials are most effective for training employees if they illustrate the application of work simplification generalizations to the types of work which are performed in a food service operation.

5. Work simplification training is effective for workers with low morale as well as for those with high morale.

6. A work simplification training program for employees contributes to harmonious management-labor relations.

7. Through work simplification training, employees become more receptive to analysis of their jobs and to adoption and use of methods.

8. Work simplification training classes for employees are most effective if the classes are spaced over a reasonable period of time rather than concentrated within a very short period. Follow-up or refresher classes after the original training classes reinforce the learning.

9. Work simplification classes for employees are more effective if supplemented by the employees' participation in or contact with actual simplification of work methods on the job.

10. Improved methods adopted by employees, as a result of a work simplification training program, will continue to be used until better methods are developed.

11. Many employees who participate in work simplification training contribute usable suggestions for improving work methods and will improve some methods of work determined by them.

12. Employees' suggestions in regard to simplifying work methods are usually related to changes in equipment or physical facilities. Work simplification training provides a basis for employees to evaluate the practicality of such suggestions from the standpoint of effect on other work procedures and economic feasibility.

Summary

Recognition of the need in quantity food production and service for improved work methods, for optimum utilization of the labor resource, and for satisfactory management-labor relations prompted a study of training in work simplification. Additional factors considered included the fact that there is relatively little evidence, based on research, regarding the effectiveness of various training methods in quantity food production and service, and there is need for developing methods of research in food service management, specifically those phases of management concerned with employee training.

In this investigation the objectives of work simplification training for food service employees were stated. Generalizations, basic for such training, were developed. Training methods were planned. Training materials were reviewed, and appropriate ones were selected. In addition, special visual materials were developed. An experiment in work simplification training for workers was conducted. Tests were developed and administered. The results of these tests and other data collected were used to interpret the outcomes of the training. Assumptions and hypotheses were presented; and on the basis of this investigation, research methods for future similar studies were recommended.

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World Population and Food Problems

"An impressive increase in food production in nearly all regions of the world," has been noted in a new report of a United Nations survey which was presented at the May meeting of the UN Social Commission. Recently increases in production, together with imports, loans, and donations from abroad, the report says, "have been sufficient to eliminate wide-scale famines which ravaged some areas a few years back, but the problems of chronic malnutrition have not been solved."

There is little indication, according to this report, that some of the longer-term fundamental problems of world food and agriculture have come appreciably nearer to solution. "Food consumption per capita in many less developed countries, containing a large part of the world's population, still remains below the pre-war level. The wide disparities in consumption between the better-fed and the poorly-fed nations . . . have not noticeably diminished. Patterns of food production . . . have become too rigid. World trade in foodstuffs shows little sign of improvement."

The report goes on to say that "perhaps the most serious feature of this unbalanced situation" is the failure of consumption to expand in many parts of the world in the face of larger supplies and increased potentialities for food production." Large food surpluses have accumulated, chiefly in North America, but even in less developed areas, there have been difficulties in marketing supplies, such as rice in the Far East.

Looking to the future, the report notes that because of the rate of growth of the world's population, "a dramatic increase" in food supplies will be required to feed the population of the world in, say, twenty-five years, at even the current levels of consumption.

Frequency of Use of Prepared Mixes[1]

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COMPARATIVELY little information is found in the literature concerning the extent to which homemakers use mixes in food preparation. Such information is of importance to dietitians and community nutritionists who advise families on their food purchases and also to those who teach food preparation and purchasing.

This survey was undertaken to obtain information on the frequency of use of mixes by homemakers and factors which might influence the use of such products.

Procedure

A questionnaire was used with the following nine food items chosen as typical of those for which prepared mixes are available in most stores: biscuits, yeast rolls, muffins, cakes, cookies, pancakes, puddings, pastry, and icings. The first question was designed to determine the frequency of serving these foods in the home since it would be misleading to say that a homemaker did not use a mix when the true answer was that she did not serve the product at all. The second question was planned to obtain information on the frequency of using mixes. Information on size of family, occupation, age, extent of education of the homemaker, place of residence, and reasons for or against the use of mixes was also requested.

The questionnaire was pre-tested with a small group and after minor revisions was then distributed to homemakers by home demonstration agents in seventeen counties, by home economics teachers in five high schools and four colleges, and by home economists of two public utility companies. The questionnaires were distributed in the spring of 1956. By this procedure, homes all over the state of Alabama were reached. A total of 3198 schedules were returned; 1029 were rejected because of incomplete or contradictory answers. The information on the complete schedules was coded, punched, and sorted on IBM machines.

All data on the use of mixes were calculated on the basis of those homemakers who indicated that they served that particular food. For example, 2169 completed questionnaires were returned; 1862 homemakers reported that they served yeast rolls, and 1029 of these homemakers or 56 per cent used a mix some of the time.

Results

BISCUITS

Frequency of Serving. Biscuits, which are considered a typical southern food, were served by 2127 families or 98 per cent of the total group responding to the questionnaire. Forty-four per cent of these families served biscuits each day and 17 per cent served them "once a week" (Table 1).

Rural families served biscuits more frequently than did the urban families: 68 per cent of the rural homemakers served them each day. The larger the community, the less frequent was the use of biscuits; only 26 per cent of the families in cities of over 100,000 population served biscuits each day. For biscuits and all other foods studied, there was little difference in food practices in the communities of 10,000 to 50,000 and 50,000 to 100,000; therefore, the data from these two groups were combined in this report.

The larger fmilies served biscuits more often than the smaller families. Half of the families of four or more persons ate biscuits "daily," while only one-third with two people used them each day.

In two-thirds of the families where the homemaker had not continued her education beyond grammer school, biscuits were served "daily," whereas less than one-third of the homemakers who had had some college education served them each day.

Use of Mixes. Only 36 per cent of the families who served biscuits at any time used a mix in their

[1] Received for publication October 8, 1956.
[2] Appreciation is expressed to Dean E. Neige Todhunter for her advice in planning this study and the preparation of this paper.

TABLE 1 **Frequency of home-serving of certain foods and the use of mixes in their preparation**

FOOD	FAMILIES SERVING PRODUCTS*										FAMILIES USING MIXES‡									
	Daily		Once a week		Sometimes		Never		Total†		Always		Usually		Sometimes		Never		Total §	
	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%
Biscuit	957	44	361	17	809	37	42	2	2127	98	147	7	177	8	453	21	1350	63	777	36
Yeast rolls	52	2	384	18	1426	66	307	14	1862	86	203	11	234	13	592	32	833	45	1029	56
Muffins	258	12	245	11	1384	64	282	13	1887	87	115	6	163	9	420	22	1189	63	698	37
Cake	187	9	1120	52	852	39	10	<1	2159	100	401	19	469	22	976	45	313	14	1846	86
Cookies	282	13	427	20	1364	63	96	4	2073	96	116	6	118	6	673	32	1166	56	907	44
Pancakes	20	1	471	22	1423	66	255	12	1914	88	651	34	306	16	471	25	486	25	1428	75
Puddings	20	1	496	23	1522	70	131	6	2038	94	367	18	400	20	815	40	456	22	1582	78
Pastry	66	3	666	31	1353	62	84	4	2085	96	179	9	259	12	667	32	980	47	1105	53
Icings	36	2	675	31	1366	63	92	4	2077	96	104	5	145	7	780	38	1048	50	1029	50

* Per cent of 2169 schedules.
† Includes "daily," "once a week," and "sometimes."
‡ Percentages based on those who served: "daily," "once a week," and "sometimes."
§ Includes "always," "usually," and "sometimes."

preparation (Table 1). The families in rural communities and in towns of less than 10,000 population used mixes less frequently than families living in cities.

Twenty-seven per cent of the homemakers with less than high school education used a mix at some time, whereas 38 to 42 per cent of those with more formal education made use of a biscuit mix at some time.

Size of family and age of homemaker appeared to have little influence on the use of mixes. Mixes were used "always" more frequently by the employed homemaker than by the full-time homemaker, but since the sample included 1526 full-time homemakers and only 643 employed women this can only be considered a trend.

YEAST ROLLS

Frequency of Serving. Rolls were served at some time by 86 per cent of the households, but only 2 per cent served them "daily" and 18 per cent "once a week" (Table 1). Serving of yeast rolls did not seem to be influenced by the size of community, the size of the family, the age of the homemaker, or whether she worked away from home. There was, however, some difference in frequency of serving rolls when the data were studied in relation to the educational background of the homemakers. Those with a college education served rolls more frequently (22 per cent of the families at least once a week) than did those with less than high school education (15 per cent).

Use of Mixes. Fifty-six per cent of the families who served rolls at some time used a mix in their preparation (Table 2)—11 per cent "always," 13 per cent "usually," and 32 per cent "sometimes." Twice as many city families as rural families "always" used roll mixes (Table 2). The older homemakers and the full-time homemakers used mixes less often than did others.

MUFFINS

Frequency of Serving. Muffins were served almost as frequently as rolls: 87 per cent of the families served them at some time while 12 per cent served them each day (Table 1). Sixteen per cent of the rural families served them "daily" compared with only 7 per cent of the city families. Muffins were used "daily" in almost twice as many households in which the homemaker had a less formal education, as in those where the homemaker was a college graduate.

Use of Mixes. Only 37 per cent of the homemakers who served muffins used a mix at any time in their preparation, and rural homemakers used a mix less frequently than any other group (Table 2).

CAKE

Frequency of Serving. As might be expected, all homemakers served cake at some time; 9 per cent had cake each day and 52 per cent served cake "once a week" (Table 1). The older homemaker served cake more frequently than did the younger ones, and rural homemakers served cake twice as frequently as did the city homemaker.

Use of Mixes. Mixes were used in cake-making more often than in preparation of any other product; 86 per cent of the families used cake mixes at some time and 19 per cent of these "always" used a mix. City families "always" used cake mixes more often than did rural families, and younger homemakers (25 per cent) "always" used them more often than did those over forty years of age (15 per cent).

COOKIES

Frequency of Serving. Cookies were included in the menus in 96 per cent of the households with 13 per cent of the homemakers serving them every day (Table 1). The homemakers between thirty and forty years of age served cookies more often than did those under thirty or over forty, and the larger families

TABLE 2 Influence of size of community on frequency of using mixes

SIZE OF COMMUNITY	PERCENTAGE OF FAMILIES			
	Always use mix	Usually use mix	Sometimes use mix	Never use mix
Biscuits				
Rural*	3	4	17	76
Less than 10,000†	5	5	20	70
10,000 to 100,000‡	10	12	22	55
Over 100,000 ⁂	10	13	27	50
Yeast Rolls				
Rural	7	11	31	50
Less than 10,000	13	14	30	42
10,000–100,000	12	11	34	43
Over 100,000	14	14	32	40
Muffins				
Rural	4	5	18	73
Less than 10,000	5	12	21	62
10,000–100,000	9	8	26	57
Over 100,000	8	11	26	55
Cake				
Rural	14	19	49	19
Less than 10,000	16	18	51	15
10,000–100,000	23	25	41	11
Over 100,000	23	26	40	11
Cookies				
Rural	4	4	26	66
Less than 10,000	6	6	34	55
10,000–100,000	8	6	37	49
Over 100,000	7	7	37	49
Pancakes				
Rural	23	11	30	36
Less than 10,000	34	15	27	24
10,000–100,000	41	20	18	20
Over 100,000	43	20	20	17
Puddings				
Rural	7	15	47	31
Less than 10,000	18	17	41	24
10,000–100,000	24	24	37	15
Over 100,000	29	24	32	15
Pastry				
Rural	4	8	29	59
Less than 10,000	8	11	32	48
10,000–100,000	13	14	37	36
Over 100,000	12	17	33	39
Icings				
Rural	4	6	33	58
Less than 10,000	4	6	40	51
10,000–100,000	7	9	44	40
Over 100,000	6	8	39	47

* 783 replies.
† 356 replies.
‡ 354 replies.
⁂ 676 replies.

served cookies more frequently than did the families with only two members.

Use of Mixes. Forty-four per cent of all the homemakers used a cookie mix at some time, but only 6 per cent of these "always" used a mix and 6 per cent "usually" used a cookie mix. Rural families used a mix less often than did urban families; the employed homemakers used mixes more often than did the full-time homemakers.

TABLE 3 Consumer reaction to use of mixes

CONSUMER REACTION	NUMBER OF REPLIES	PER CENT OF TOTAL REPLIES
Reasons for Using Mixes		
Saves time in preparation	1706	79
Product more likely to be successful	510	24
Cheaper	196	9
Miscellaneous	19	1
Total	2431	
Reasons for Not Using Mixes		
Prefer home-prepared product	1013	47
Costs more	138	6
Bakery product easier to use	103	5
Miscellaneous	22	1
Total	1276	

PANCAKES

Frequency of Serving. Pancakes, though served "daily" by only 1 per cent of the families, were served "once a week" by 22 per cent and "sometimes" by 66 per cent. Rural families served pancakes less often than urban families and small families less often than larger families.

Use of Mixes. Mixes were widely used; 75 per cent of the families used them some of the time and 34 per cent of these "always" used a pancake mix. Urban families used mixes more often than rural families, and 39 per cent of the younger homemakers "always" used a mix compared with 30 per cent of the homemakers over forty years of age.

PUDDINGS

Frequency of Serving. Puddings were served by 94 per cent of all the families reporting; 1 per cent serving them "daily" and 23 per cent "once a week." They were served more frequently by rural families and by larger families.

Use of Mixes. There were 78 per cent of the homemakers who used pudding mixes some of the time; 18 per cent "always," and 20 per cent "usually." The urban and the younger homemakers used the mixes most frequently.

PASTRY

Frequency of Serving. While only 3 per cent of the families made pastry each day, 31 per cent prepared it "once a week" with a total of 96 per cent preparing pastry at some time. Age, education, employment, size of family, or place of residence did not appear to have any influence on frequency of making pastry.

Use of Mixes. A mix was used for the preparation of pastry some of the time by 53 per cent of the homemakers; 9 per cent "always" used a mix; and 12 per cent "usually" used a mix. Urban homemakers used a mix from two to three times as often as did rural homemakers.

ICINGS

Frequency of Use. Ninety-six per cent of the families used icings at some time; 2 per cent served icings on some food every day; and 31 per cent did so "once a week."

Use of Prepared Icings. Fifty per cent used prepared icings some of the time, with 5 per cent all of the time. Again, the younger and the urban homemakers used mixes most frequently.

CONSUMER REACTION TO USE OF MIXES

Many homemakers gave more than one reason and these are summarized in Table 3. The time-saving factor was the reason most frequently given for using mixes. The major reason for not using mixes was the preference for a home-prepared product.

Discussion and Summary

Biscuits were served at least once a week by 61 per cent of the rural and urban families. This is similar to the finding in the study sponsored by the United States Department of Agriculture in which it was reported that 67 per cent of the families in Birmingham (1) served biscuits at some time during the week of the survey. In the Birmingham study waffle or pancake mix was reported as being the most frequently used of all mixes with cake mix next in preference. In the present study, which included homemakers in other large cities and also rural groups, cake mix was the most frequently used, with other mixes in the following order of usage: puddings, pancakes, yeast rolls, pastry, icings, cookies, muffins, and biscuits.

The size of the community where the homemaker lived appeared to be the major factor influencing the frequency of serving the above foods and the use of mixes in their preparation. Biscuits, muffins, and cake were served more frequently by rural than urban families. Yeast rolls were served infrequently by any group, and other foods were served with about equal frequency by both urban and rural families. However, urban families used mixes for all nine products more frequently than did rural families.

The larger families served biscuits, cookies, pancakes, puddings, and icings more often than did smaller households, but there was little difference in the frequency of their use of mixes for these foods.

The younger homemakers and those who were employed made more frequent use of mixes than the older or the full-time homemaker. However, there were only one-third as many employed homemakers as full-time homemakers so that employment may not have been a significant factor.

The trend in this study was to more frequent use of mixes by homemakers who had a college education.

Reference

(1) LeBovit, C., and Clark, F.: Household Practices in the Use of Foods . . . Three Cities, 1953. U.S.D.A. Agric. Inf. Bull. No. 146, April 1956.

Baking with Cake Mixes at the South Pole

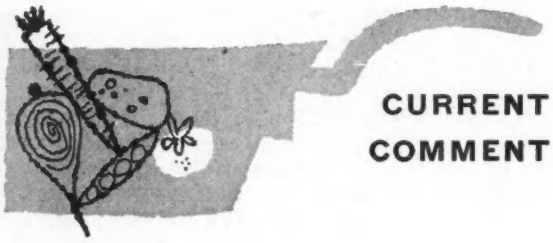
In January, radio amateur Paul Blum in Syracuse, New York, received an SOS from twelve men stationed at the South Pole. Their cakes had been coming out of antarctic ovens with a texture similar to that of the surrounding ice flows, and many had "depressions in the center." Assigned to their ice-bound polar base for a year, the men faced the prospect of going without one of the few state-side pleasures they had counted on and asked Mr. Blum to see if he could do something about it, since it presented a real morale problem.

He turned the request over to the Syracuse Red Cross, who in turn contacted the home economics laboratories of Pillsbury Mills, where Ruth Andre and her staff worked on the problem.

It seems that at the Pole, the altitude is 8000 ft. However, because of small demand, quantity cake mixes, with which the Polar crew was supplied, are not adjusted to high altitudes, as are some home-style mixes. The Pillsbury home economists worked out the necessary adjustments: for each 5-lb. bag of mix, 3 oz. flour should be added. Use 2 lb. 11 oz. water. Increase baking temperature to 400°F., as well as baking time.

This advice was relayed to the men of Operation Deep Freeze, and on January 24, the men radioed the following message to Miss Andre: "We, the men of the South Pole crew, wish to thank you and your staff for helping us solve our baking problem . . . Using your advice to experiment with cake mix along with our other projects and following your example of adding flour to the regular cake mix, Chester, our cook, tried adding 3 oz. more flour to your recipe and now we have some mighty fine cakes, thanks to you and your staff for finding the solution.

"In reference to sending us some further recipes and to supplies on hand for toppings, all we have for toppings are confectioners sugar XXXX, brown sugar, cocoa, coconut, and extracts of all flavors. We would really appreciate any recipes you or your staff could send us, and the variations would be very nice."



CURRENT COMMENT

Nutrition Education—What Is the Problem?

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MUCH HAS been written and said recently about problems involved in teaching children good eating habits. Getting the school administrator interested, obtaining the teachers' help, collecting proper teaching materials, and many other areas of educational effort have been investigated. But there has been a dearth of effort in the central problem of any nutrition education program, that is, the problem of changing the dietary habits of the children. In areas such as materials, administrative approval, and teacher acceptance much progress has been made; but, in the actual attainment of objectives, we are still far from that which we seek.

Why? What is wrong with our efforts, and what can we do to make them more fruitful? The answers lie not so much in evolving new techniques and materials as in examining our basic problem.

To begin with, it should be stated in the most positive terms possible: *our food selection patterns are habits.* This is no new and startling truth, but it may be startling to remind the reader that you cannot change or break habit unless you know how the habit was formed. Likewise, we should bear in mind that learning to vary habits is the most difficult form of learning that any individual faces. If you have ever stopped smoking, you know the problem involved.

Sources of Dietary Habits

To take first things first, then, where do habits of diet come from? Where do we pick them up? The answers to these questions are probably as variable as people and diets; however, there are several generalities we may draw to help us in planning nutrition education programs.

Some of our eating habits are matters of custom. These may be cultural patterns, family customs, or individual ritual. The inclusion of bird's-nest soup or snails or grasshoppers in the diet is cultural custom; the lack of appeal of these delicacies to most of us in this country is due to differences in cultural patterns. Families, too, set patterns which help to influence the individual's tastes and eating habits. I know of one man who refused to eat a serving of strawberry shortcake because the cake was square; in his home, the shortcake had always been cut in circles. Family custom is seldom as strong as this, but who of us has not ordered a dish in a restaurant and then been disappointed that it was different from what "mother used to make"? Personal ritual, too, helps us to establish our food selection habits. The man who wants a cup of coffee with his newspaper before breakfast may react violently against his morning meal if this pattern is broken.

Another great source of dietary habits is association. As we often connect the songs we hear with specific events, people, and places, so we associate foods with experiences related to them. Many times this association is subconscious but it is, nevertheless, quite real. We know that the young child's taste buds are more numerous and more sensitive than the adult's. Doesn't it stand to reason that a food served too hot or too salty might cause a child to associate that food with the unpleasant aspects of the taste? As adults, the potatoes might taste all right to us, but to little Jimmy, with his delicate palate, the spuds are so salty he may go through life suspicious of all potatoes. And, if oranges are the reward for "being good," the child is much more likely to enjoy them than if they are used as a "chaser" for castor oil. One of the best reasons I know for making mealtimes pleasant is to prevent children associating the food with the family quarrel.

Finally, some food habits are the outgrowths of the child's real or imagined needs. Some of these needs are psychologic and others are physical. The former are far more powerful than the latter. These psychologic needs, which form the basis of many of our eating habits, are complex and often lie at the subconscious rather than at the conscious level. A list of possible psychologic needs that could influence food selection habits would be infinite. Let's try to point out a few major ones.

Psychologic Needs

The need to be like others often influences our food choices. Food fads in the adolescent years are evidences of this. The high school girl who goes without lunch may be doing so only because the gang does so. A few years ago only a few people in this country had even heard of pizza pie; today it is a major culinary fad. Often, too, our eating habits are the result of our once having copied an admired person. The "Breakfast of Champions" has capitalized on this fact. To ignore this need of social approval is to ignore one of the major forces shaping our eating habits.

Other psychologic needs which may be met through our dietary habits include the need for at-

tention and for acceptance. The young child soon learns that there is one way he can get the undivided attention of his parents, and that is by his refusing to eat. Likewise, he recognizes that one of his best ways of "getting even" for real or imagined mistreatment by his parents is by not eating.

Other Needs

A final influence in the formation of food selection habits is physiologic need. It should be understood, however, that this is a "last resort" reason for eating certain foods. Although most nutrition education has moved along the channels of "food for health," this is the least influential of any factor in establishing eating habits. Indeed, many people will see that others eat the right foods without doing so themselves. Many a mother rises early to cook her family a good breakfast, sees them off to work and school, then relaxes with her own morning meal consisting of a cup of black coffee.

To summarize, food selection comes through habit and habit comes through a complex process involving many and varied experiences. To progress, changing the diet involves changing the habits. This is a big job, and it deserves and must have careful consideration of every person who believes in or attempts nutrition education.

How Are Habits Changed?

How do we approach the problem of changing food habits? Well, not by talk. Telling students about the Basic 7 may have value but not unless some desire exists to change eating habits. One animal feeding experiment is worth thousands of words in health books or by teachers. Habits are not changed by preaching or by lecturing. They are changed by the individual's becoming actively engaged in doing something. Animal feeding experiments, tasting parties, helping to plan cafeteria meals, and other such activities will create a desire to change eating habits when no amount of reading or talk will.

Habits are changed by replacement with other habits. We should not attempt to "break" a poor eating habit; we should attempt to give the individual a substitute for his undesirable habit. Take out the soft drink machine, but replace it with a juice break at mid-morning. Call a halt to the children "going to the store" for lunch, but replace it with a cafeteria situation which is clean and happy. Feed the child's psychologic needs through the day-to-day school living and he will not seek eating-habit substitutes.

Finally, nutrition education is a long-term process. We should not become discouraged that we do not change the diet of a community in a year or in ten years. If the eating habits of one generation improve slightly, those of the next generation will improve more. Some nutritionists want to give up the educational aspects of the program because progress comes so slowly. They should remember that changing a child's eating habits does not take place in a month or a year, and changing the dietary habits of a people is a job which is never finished.

How Do Snacks Affect Total Caloric Intake of Preschool Children?[1]

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WITH SOME children, the adult schedule of three meals a day is unsatisfactory. Some active, rapidly growing children become hungry more often than three times a day. Some children with poor appetites cannot eat enough at one meal to satisfy them until the next adult-scheduled meal. In some situations, mealtime is so unpleasant that a child may be unable to eat well. Between-meal feedings might benefit such children.

However, some parents fear that snacks "ruin" appetites for lunch. This study was conducted to measure the effect of mid-morning snacks on lunch appetites. If the between-meal feedings are scheduled early, how will they affect lunch appetites? Which has more influence, the menu or the fact that the child is allowed to eat between meals? If the mothers and children know a snack is to be offered, will they tend to neglect breakfast? Specifically, how do snacks affect the appetites of the children who eat the smallest lunches?

Procedure

Caloric intakes at breakfast, mid-morning snack, and lunch of twenty-nine children at the Montana State University Nursery School were calculated. The following schedule was followed:

CONTROL PERIOD

For five days, no between-meal foods were served. This period served as a control period with which other treatments were compared.

EXPERIMENTAL PERIODS

No. 1—five days. Children were served a variety of foods as snacks 2½ hr. before lunch. The variety included a fruit, a vegetable, a protein food, a cereal food, and a frozen citrus fruit juice. They could eat what they pleased for as long as they were interested in eating.

No. 2—five days. Children were served all the ho-

[1] This study was conducted with the help of a grant-in-aid from the Community Creamery, Missoula. Received for publication September 25, 1956.

mogenized milk they wanted 2½ hr. before lunch.

No. 3—three days. Children were served one "Dixie cup" of ice cream 2½ hr. before lunch. It was believed this was typical of the amount most mothers would give a child.

No. 4—two days. Children were served all the ice cream they wanted 2½ hr. before lunch.

The lunch menus were standardized: meat balls, mashed potatoes and gravy, buttered carrots, celery sticks, whole wheat bread and butter, fruit cocktail in gelatin, and milk were served on Mondays; on Tuesdays, macaroni and cheese and appropriate accompaniments were served; Wednesdays' menu included baked fresh sole fillet, scalloped potatoes, buttered beets, whole wheat bread and butter, baked custard, and milk; and so on. The children were free to choose the amounts they wished at both lunch and snack time.

Correlations were calculated between the size of snack eaten and the amount by which each child's lunch deviated from the average lunch he had eaten during the control period.

Results

EFFECT OF SNACKS ON LUNCH INTAKE

The average calculated caloric values of lunches and snacks eaten by the group are given in Table 1, together with comparisons with luncheon intakes during the control period.

Caloric intake for three of the lunches that followed snacks was actually greater than during the control period, but for twelve of the lunches during the experimental periods, intake decreased. On each snack day, the caloric value of the snack exceeded the decrease in lunch. Thus the net caloric intake was greater than during the control period.

During the week when a variety of snacks was served, snack intake averaged 33 per cent of the caloric value of the averaged control lunch, while intake at lunch was 14 per cent below the control figure. Net caloric intake was thus 19 per cent above that of the control period.

When unlimited milk was available at snack time, intake amounted to 23 per cent of the calories in the average control-period lunch. Following the milk snacks, the size of the children's lunch decreased only 6 per cent, calorie-wise, below the average control lunch. Thus, allowing the children to drink all of the milk they wanted 2½ hr. before lunch increased their total caloric intake by 17 per cent.

One dish of ice cream as a snack averaged 32 per cent of the control lunch, while the decrease in intake at noon for that week was 15 per cent, leaving a net increase in caloric intake of 17 per cent.

With mid-morning availability of unlimited amounts of ice cream, the snack intake was 63 per cent of the calories of the control lunch. Subtracting this from the 14 per cent decrease in lunch resulted in a net increase of 49 per cent in caloric intake.

TABLE 1 **Average caloric intake of group of twenty-nine preschool children during control and experimental periods**

FOOD SERVED	Monday		Tuesday		Wednesday		Thursday		Friday		Average per cent of control period
	Intake	Per cent of control period*	Intake	Per cent of control period*	Intake	Per cent of control period*	Intake	Per cent of control period*	Intake	Per cent of control period*	
	calories		*calories*		*calories*		*calories*		*calories*		
Control period (lunch only; no snacks)	457	100	389	100	338	100	415	100	380	100	100
Experimental periods											
No. 1											
Variety of food as snacks	227	50	93	24	149	44	110	27	82	22	33
Lunch	384	84	338	87	258	76	346	83	387	102	86
Total (net)	611	134	431	109	407	120	456	110	469	124	119
No. 2											
Milk as snack	74	16	64	16	87	26	112	27	120	32	23
Lunch	394	86	345	89	359	106	315	76	436	115	94
Total (net)	468	102	409	105	446	132	427	103	556	147	117
No. 3 and 4											
Ice cream as snack	125	27	125	32	125	37	217	52	277	73	44
Lunch	379	83	334	86	288	85	323	78	358	94	85
Total (net)	504	110	459	118	413	122	540	130	635	167	129
Average increase in net intake when snacks were served											22

* Per cent in snack line = $\frac{\text{caloric value of snack or lunch}}{\text{caloric value of lunch during control period}} \times 100$

If the two experimental weeks in which ice cream snacks were served are considered together and intake figures averaged, a net increase of 33 per cent in caloric intake occurred.

It was interesting that the amount of milk drunk as snacks increased from Monday's 74 calories to Friday's 120 calories. Possibly the children learned to enjoy milk more in the relaxed snack situation. On the first day milk was served, eight children refused it. Two of these asked for it on Tuesday, five on Wednesday, four on Thursday, and five on Friday. Thus, on the fifth day, of the original eight who did not want milk on Monday, two drank two glasses of milk, three drank one glass, and only three were still not interested.

Although an effort was made to allow the children freedom in amounts they wanted to eat both as snacks and at lunch, apparently there was still a carry-over from previous lunches in which the children had been encouraged and expected to clean their plates. They continued to eat all that was served most of the time, expressing freedom only in acceptance or rejection of second helpings. At snack time, freedom of choice was more complete.

Of the four children who ate the smallest lunches during the control period, the increase in total intake was greater than for those with larger appetites. During the week when a variety of snacks were offered, a net increase in caloric intake (including both snacks and lunches) of 42 per cent was recorded. This was the only experimental week in which their intakes during lunch actually *increased* (3 per cent). When mid-morning milk was served, lunch intake decreased 5 per cent, but net intake was 27 per cent above the control period. Ice cream in the middle of the morning resulted in a decrease in lunch intake of 10 per cent, but the net caloric increase was 47 per cent.

The caloric intake of each child during the control period and the experimental periods is presented in Table 2. The data are arranged according to the amount eaten during the control period, with the children who ate the smallest amounts listed first. All but four or five children increased their total caloric intake during the experimental periods. Where decreases occurred, the figures are presented in italics. During the five days when a variety of foods were offered as snacks, and similarly when a snack of milk was served, one child with a poor appetite, two with nearly average appetites, and one with an unusually large appetite ate less than during the control period. This decrease could hardly be blamed on snacks, however, for of the two children with small appetites (one with milk snacks and one with a variety of snacks), one ate no snacks at all, and the other did not eat snacks on four of the five days. The others whose intake decreased ate no snacks, or ate snacks on only two, three, or four of the days, with the single exception of one child who ate only an average of 60 calories as snacks, compared to the group's average of 132 calories. It would appear that on at least some of these days, these children whose intake decreased simply did not feel like eating as much as usual of either snacks or lunch.

TABLE 2 Average caloric intake of each child during control and experimental periods (arranged according to amount eaten during the control period)

CHILD	LUNCH ONLY (control period—no snack)	LUNCH + VARIETY OF FOODS AS SNACK	LUNCH + MILK SNACK	LUNCH + 1 DISH OF ICE CREAM	LUNCH + UNLIMITED ICE CREAM
	calories	*calories*	*calories*	*calories*	*calories*
Mike R.	251	332	305	336	383
Mike L.	281	446	325	376	581
Paul	284	293*	327	345	388
Evan	298	*294*†‡	348	435	496
Scott	306	370	336	417	320
Sonia	306	335	*265* ⁂	344	371
Bob S.	310	432	379	—	—
Clark	318	432	415	466	591
Coleen	319	393	423	425	349
Valerie	328	—	379	468	574
Tom H.	339	368	354	389	627
David	343	461	627	458	799
Dickie	346	416	*332*‖	—	—
Walter	351	*342*‖	358	*329*	608
Dwight	379	396	438	428	613
Mickey	382	432	403	455	562
Mark	398	670	642	413	790
Kathy	433	*316*¶	*389*†	525	597
Johnnie	439	550	473	*426*	485
Tom T.	453	633	519	634	—
Doug	459	503	501	577	872
Janet	469	548	623	504	636
Bob M.	510	643	593	582	718
Mary	523	564	706	*476*	—
Gary	571	605	604	*511*	806
Vickie	597	*560***	*460***	*503*	653
Debbie	773	910	775	*697*	*392*

* Ate no snacks during one day of this period.

† Ate no snacks during this period.

‡ Italicized numbers indicate amount eaten was less than that eaten during the control period.

⁂ Ate no snacks during four days of this period.

‖ Ate no snacks during two days of this period.

¶ Ate an average of 60 calories as snack during this period (compared with the group average of 132 calories).

** Ate no snacks during three days of this period.

One dish of ice cream increased the total intake more for the children with the smallest appetites than for the others. The total amounts eaten by the four with the largest appetites actually decreased, perhaps beneficially. Offering unlimited amounts of ice cream increased the total intake for all children but one who had been eating unusually large amounts; if she had not decreased she might have eventually become overweight.

The children with the smallest appetites varied little in the amounts they ate for lunch as compared with the children with the larger appetites. However, on each snack day, the net caloric intake of snack plus lunch was more than for the lunches of the control period, the increase being due primarily to the snacks. These children showed greater variation in the size of snacks eaten than in the amounts of lunch eaten, which may indicate that they felt freer to eat more of a food they liked in the snack situation.

Among the children with larger appetites, erratic patterns of eating were apparent. A child could—as Bob M. did—eat 940 calories for lunch one day and 110 the next.

The correlations between the amounts of snacks and the deviations of each child's lunch from the average he ate during the control period are given in Table 3. With this size sample (twenty-nine children), the correlation would need to be at least 0.37 to be significant at the 5 per cent level. On only two days was there a correlation over 0.37. Seven correlations were negative, five were positive. One can conclude only that there was not a significant relationship between the size of the snack and the deviation in lunch appetites. A child could, and did, eat a substantial snack and either a larger- or smaller-than-usual lunch.

These correlations were translated into coefficients of determination (r^2) yielding the following percentages: The amount of a variety of food eaten 2½ hr. before lunch determined 0, 0, 40, and 11 per cent (negative relations) and 1 per cent (positive relation) of the variance of the succeeding lunch. The amount of mid-morning milk determined 0, 20, and 3 per cent (negative relations) and 5 and 2 per cent (positive relations). Intake of ice cream eaten as a snack determined 0 and 2 per cent (positive relation) of the variance of the lunch. These results are similar to those found in a previous study (1) in which the amounts of snacks eaten 2½ hr. before lunch were found to have little relation to the deviation of the amount eaten by each child at lunch.

Thus, although for the group as a whole, the average lunch intake decreased when snacks were served, the amount any individual child ate at a specific meal could not be predicted from the size of the snack he had eaten. For example, the amounts eaten as lunch by the children with the smallest appetites consistently remained the same, regardless of the size of the snack eaten. The food consumption of the children with the largest appetites showed the greatest variation, which was not obviously related to the snack; a child might simply feel hungry all morning and eat both a large snack and a large lunch—or a child might especially like the foods served as snacks and as lunches and eat large quantities of both, or he might not particularly like either the snack or the lunch. These factors and individual differences probably play more important roles in determining the amounts eaten than did the size of the snack eaten.

TABLE 3 Correlations between caloric value of snack and deviation in caloric value of control lunch

DAY	CORRELATION		
	Snack consisting of a variety of foods	Snack of milk	Snack of ice Cream
Monday	−0.005	0.002	—
Tuesday	−0.05	−0.45	—
Wednesday	−0.63	0.22	—
Thursday	0.09	0.08	0.08
Friday	−0.33	−0.18	−0.02

While an effort was made to serve similar luncheon menus and the food served was quite acceptable, it was true that those foods that were slightly less popular all appeared on the Wednesday menu, and those that were slightly more popular were grouped in Monday's menu. Examination of the figures showed that on Wednesdays, the lunch intake decreased an average of 23 per cent below that on Mondays. This was the biggest measured difference in amounts eaten at lunch.

BREAKFAST INTAKE

The breakfasts eaten by the four children with the smallest appetites, as recorded in the control period and in the period when a variety of snacks was offered, were recorded by their mothers and are shown in Table 4. When these four children expected snacks later in the morning, they averaged 101 calories more for breakfast than when they did not. The breakfast eaten by the group of twenty-nine children averaged 305 calories when they did not anticipate a mid-morning snack, 323 calories when they did not expect snacks later, an increase of 23 calories.

For Mike R. and Evan, who ate both small breakfasts and small lunches during the control week, the increase in breakfast was in accordance with the hypothesis that when snacks are to be served later, the mother would worry less about breakfast. Then, in the more relaxed atmosphere, the child would eat a larger meal. However, this is largely speculation, of course. One would not expect a mother and child to

TABLE 4 Average caloric intakes at breakfast of four children with smallest appetites

CHILD	INTAKE WHEN MID-MORNING SNACK WAS NOT ANTICIPATED	INTAKE WHEN MID-MORNING SNACK WAS ANTICIPATED
	calories	*calories*
Mike L.	242	357
Evan	169	253
Mike R.	427	462
Paul	381	553
Average.....	305	406

respond so immediately, nor to the extent of 100 calories. It would be safe to conclude only that the prospect of having snacks later did not decrease the size of breakfast. This would be an interesting area for further investigation.

Summary and Conclusions

The amounts of food eaten by twenty-nine children in the Montana State University Nursery School at breakfast (two weeks), mid-morning snacks (three weeks) and lunches (four weeks) were recorded. The size of lunch eaten when no snacks were served was considered as the control. The amounts eaten as snacks served 2½ hr. before lunch and the size of the succeeding lunches were compared with lunch intake alone during the control period.

Although average caloric intake of the children at luncheon following a mid-morning snack decreased, total caloric intake including both the snack and luncheon increased for each of four types of snacks. Correlations and coefficients of determination between the size of snack and luncheon intake deviation were not significant.

The amount of lunch eaten by an individual child could not be predicted from the size of the snack he ate. Factors of individual differences and the appeal of the foods served were more important in determining the size of lunch than was the size of the snack.

The breakfasts eaten when the children did not expect mid-morning snacks averaged 305 calories; when snacks were anticipated, breakfast intake averaged 323 calories. The expectation of between-meal snacks did not cause the mothers and children to neglect breakfast.

The amount of milk drunk as snacks increased from 74 calories on Monday of the experimental period to 120 calories on Friday. Of the eight children who refused milk on Monday, by Friday two drank two glasses and three drank one glass. Perhaps the more relaxed snack situation, free from pressures, was helpful in teaching the children to enjoy milk.

It is concluded that total caloric intake of preschool children can be increased by mid-morning snacks scheduled 2½ hr. before lunch. Individual differences and the appeal of the foods served at lunch are more important factors in determining deviations in the size of lunch eaten than is the size of the snack.

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. . . . . .

Retraining a Child to Eat

ELIZABETH CADY[1] and
EVELYN M. CARRINGTON, Ph.D.[2]

IN FEBRUARY, 1956 when the senior writer first saw Sammie, she was a lethargic, pale four-year-old, swaying back and forth in her bed, gritting her teeth. She turned her head at sounds as if to localize them. She had no speech, but at times made a mumbling sound. Occasionally, she smiled a lopsided grin.

The previous June, Sammie had entered the Children's Medical Center with the diagnosis of tubercular infection. Shortly thereafter, she developed meningitis, the encephalopathy being widespread with greatest dominance in the left posterior frontal region. She had difficulty in using her right leg, her right arm and hand were limp, and the left side of her face showed some paralysis.

The middle of December, Sammie was placed in a stroller and taken to the playroom for a party. She seemed to like being around the other children. When talked to, she made a sound resembling laughter. With help she began to take steps and finally to get about the halls by herself, dragging one foot.

During all this time, Sammie had been given through a tube a special formula which supplied her daily nutritional needs. She played with the tube when this was not in use, manipulating it with her left hand, but ignored any other toy given her. She showed no interest in stuffed animals.

When she was taken to the dining room where the other children were eating, she habitually snatched a piece of buttered bread from another child, crumpled this in her left hand, returned the bread to the table, and placed her tube on it, making happy noises.

Since a psychologic evaluation in February showed Sammie's mental functioning to be at the eight-month level, the psychologist decided to treat her as an eight-month-old. When she rocked and sang to her, Sammie appeared relaxed and happily made humming noises. However, when her formula was given her in a bottle, the child was unable to suck and violently pushed it away. Efforts were made to put bits of crisp bacon and crumbs of cookies on her tongue, but this was difficult because Sammie clamped her jaws together, knocked the feeding hand away, and cried. Such bits as were placed on her tongue, eventually were swallowed. She could not, or did not, spit these out and never in the initial stages did she put her hand to her mouth. The last of February for two days the tube was removed, but since Sammie refused all oral feedings during this interval, the tube was replaced.

In April, the junior writer came to the Children's

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Medical Center as a dietetic intern from Baylor University Hospital. Realizing that Sammie needed to be retrained to eat with her mouth, the dietetic intern took the case as a special project, working with the little girl from 30 min. to 1 hr. each day.

FIRST DAY. Sammie was rocked and an attempt was made to feed her applesauce. She looked suspiciously at the spoon and cup of fruit, keeping her teeth clamped together. After a while, she put her finger in the food, but made no effort to move the finger toward her mouth. Sammie forcefully pushed the spoon, the hand holding the spoon, and even the applesauce container away. She was resistant to anything approaching her mouth.

THIRD DAY. It was decided to force feed Sammie, as she must taste food before she could conceive of what she was missing. Under protest, Sammie took some applesauce in her mouth. The child put her finger to her mouth, but this was to remove the food. She was laid on her back and her formula in a thickened form was spooned into her mouth. Several tablespoons were swallowed.

FOURTH DAY. Sammie struggled as usual, but swallowed 2 teaspoons formula. For the first time, she permitted her mouth to be wiped without fussing. Although she permitted a spoon to touch her lips without protest, she did not open her mouth of her own accord. It was decided to use applesauce exclusively in the training sessions because it is easily swallowed, has a pleasant taste, and has enough fiber to induce chewing.

FIFTH DAY. Sammie voluntarily opened her mouth and took a teaspoon of applesauce which she chewed and swallowed. She repeated this once and then reverted to her old methods of fussing. After a short walk, she was given a half cup of her formula although she was uncooperative. All of this was regurgitated. Earlier in the morning, she had vomited.

SIXTH DAY. She took a teaspoonful of applesauce and swallowed it. Salivation had been increased and occasionally some spitting had been observed. At rare intervals she smacked her lips and put her finger to her mouth without trying to remove the food. For the first time she did not cry as she was fed.

SEVENTH DAY. Today Sammie was very irritable and appeared extremely hungry, reaching constantly for her tube-holder rack. No effort was made to spoon feed her. A brace had been put on her leg, which possibly was related to her irate state.

NINTH DAY. The sugar was removed from Sammie's formula as she has vomited after her tube feedings for several days. This eliminated the vomiting. She also took one teaspoonful of applesauce.

TENTH DAY. She was quite fussy today. She was fed some strained apricots, which were sent by mistake. The apricots seemed to interest her, but did not stay in her mouth well. She still showed no interest in learning to eat, batting at the spoon.

THIRTEENTH DAY. After a half hour of encouragement, Sammie took a teaspoonful of applesauce. Since she is still tube fed after spoon feeding has failed, the progress has been slow. It is felt all tube feedings should be discontinued. Some association must be effected between a pleasantly full stomach and oral feedings.

SEVENTEENTH DAY. All tube feedings have been discontinued and three times a day in spite of crying and flaying hands and feet, Sammie is given puréed vegetables, meat, and fruit. She tolerates the vegetables, regurgitates the meat, and takes the sweets with mild relaxation. Today she went into the kitchen, took out a box of dry cereal and played with it. However, she made no effort to eat any.

TWENTY-SECOND DAY. Sammie attended a birthday party in the playroom. While she was sitting at the table, she took a paper cup of melted ice cream with resistance. However, she retained all she ate.

TWENTY-THIRD DAY. Sammie ingested ¼ cup cereal and ⅛ cup strained egg yolk in the morning. For lunch she took ¼ cup potatoes, ⅛ cup strained peas, ¼ cup ice cream, and ½ cup homogenized milk. For supper, she ate ¼ cup potatoes, ¼ cup strained fruit, and ½ cup homogenized milk. All the food was taken orally and retained. Vomiting has stopped completely, and there has been no constipation. All strained foods are diluted with Protenum.

TWENTY-EIGHTH DAY. For the first time Sammie is eating while sitting in a high chair. She is still resistant to oral feedings and spits out any food she does not want. However, the flaying of arms and legs is less violent and at times absent. Physically she appears healthier and stronger. Her daily intake, both of nutrients and fluids, is adequate for her needs. Although her training is not yet complete, she is well on the way to the acceptance of food orally.

THIRTY-FIFTH DAY. Sammie is no longer resistant to oral feedings. In fact, she not only eats her regular meal, but begs for additional food. This change from complete resistance to whole-hearted acceptance of oral feedings occurred spontaneously several days ago. The accompanying personality changes are just this side of miraculous. The little girl is 100 per cent happier and more demonstrative. She is now on a regular diet, with puréed foods eliminated. Self-feeding will be the next training problem.

Analysis of the Problem

This feeding problem was complicated by several factors: (a) prolonged tube feeding, (b) paralysis of right facial muscles, and (c) mental regression due to severe illness. Only an intensive and consistent program could have reconditioned Sammie to oral feeding. The program was carried out by the dietetic intern with the cooperation of the nursing service, the dietary department, and the psychologist. The problem is not yet solved, but will be carried from this point by nursing service.

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Is There a Rationale for the Bland Diet?

Dr. Seymour Gray, Harvard University Medical School, at the 39th Annual Meeting of The American Dietetic Association in Milwaukee in October 1956 introduced his presentation by stating: "There is no rationale to the bland diet. Because there is much empiricism in dietary care and very little experimental evidence, tradition and common usage have directed our diets in many instances."

And, common usage has varied widely. In 1944–45, a survey of eighty hospitals by the Diet Therapy Section of The American Dietetic Association revealed that *in toto*, practically *all* foods were considered "nonirritating" by someone. The foods *most commonly used* in the bland diet were finally published as the most acceptable list to the most people at that time (1).

More recently, greater attention has been given to the patient as an individual. Dr. Gray says: "Of course, each patient is an individual, and so many factors enter into digestion that a diet really must be tailor-made to fit each patient. To generalize is very difficult.

"There are three main principles, I think, which should be followed in respect to dietary care and particularly in respect to the bland diet. One is liberalization; two, simplification; three, individualization. We should try to liberalize and have some basic understanding of what we're trying to do, rather than just prescribe a bland diet. Many foods are restricted in a bland diet which are easily digested and well tolerated, and many foods are permitted which may cause trouble. I think we can simplify *and* liberalize the bland diet, remembering always that each patient must be handled as an individual.

"There is considerable danger in over-restriction. In the first place, if you make the diet too strict, the patient simply won't follow it. He decompensates, as we say, and he just can't handle it. Or, by over-restriction, we may produce a food fixation or create a food fad, which can be a difficult problem in itself."

In the 1952 edition of the *Handbook of Diet Therapy* (2), a bland diet is defined and described in much the same terms as reported by Johnson in 1947 (3). More recently, Lorraine Weng, Chairman of the project of the Diet Therapy Section on "Suggestions for the Revision of the *Handbook of Diet Therapy*," submitted a questionnaire to the state diet therapy chairmen inquiring whether they would like to have the three diets—the soft, the low-fiber, and the bland—combined into one.

Since all can be planned with an assortment of foods which will meet or exceed the Recommended Dietary Allowances, one nutritional evaluation of a day's food would apply to all. Footnotes indicating that deviations in preparing foods to make them mechanically soft, puréed, or modified to meet the individual's needs could be added. Miss Weng found that approximately 40 per cent of the people replying would approve such a combination being made.

What are your suggestions for a "rational" approach to this problem?

Lorraine Weng, *National Dairy Council, Chicago:*

How do we find our way out of the dilemma of the bland diet? Dr. Gray has pointed out that empiricism in dietary care, a dearth of experimental evidence, tradition, and common usage are implicit in present-day concepts of the bland diet. Perhaps this explains why 40 per cent of the people replying to the questionnaire felt a combination of the three diets—the soft, the low-fiber, and the bland—would be desirable, while 60 per cent felt that it would be impractical.

The discussion held in Milwaukee in 1956 to obtain further suggestions for revising the *Handbook of Diet Therapy* brought out this interesting question: "What is a bland diet?" Since the group seemed to be familiar with the definition in the *Handbook*, we probably can conclude that for one or several reasons the definition which was hoped would simplify and clarify this difficult problem has not done so, at least not to any great extent. Logically, then, we must ask ourselves "Why?" Is it too general? Is it too specific? Is it feasible to expect one diet to be suitable for the treatment of a variety of disorders, each with a different etiology? Is the term "bland" so broad in meaning that it leads to individual interpretation and eventual confusion?

The concensus of the discussion group in Milwaukee was that while some degree of standardization is desirable, it should take the form of adoption of terms which have the same meaning wherever they are used rather than standardization to the point of printed lists. The bland diet presents a real challenge.

These are some of the problems relative to clarifying a diet which is adjusted in its content, specific chemical constituents, fiber content, or method of preparation.

Elizabeth K. Caso, *Chairman, Diet Therapy Section, The American Dietetic Association:*

It has always seemed to many of us that the dietary management of disor-

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ders of the gastrointestinal tract has been one of the most confusing areas of diet therapy. The inconsistencies in the foods allowed or restricted have been recognized by many of us. Another problem is the extensive number of diets, many of which are actually similar but are named for different diseases or for the persons who designed them.

We are faced with the fact that there are many competing and more exotic areas of clinical research than those dealing with dietary factors causing "gastric irritability" or the relation of food to fecal residue.

May we not hope for some clarification of concepts in the dietary management of disorders of the gastro-intestinal tract as we have had for diabetic diets and sodium restricted diets?

Jean Crooks, *Dietetic Specialist, Dietetic Service, Veterans Administration, Washington, D. C.:*

During the past ten years many A.D.A. members have exerted diligent efforts on Diet Therapy Section projects to resolve the confusion of long-standing, namely, the multiple interpretations of a "bland diet." This commendable work undoubtedly contributed much to a better understanding of the basic principles of this general dietary regimen as a part of medical treatment in diversified disease conditions. Now, as considerations are being given to revision of the *Handbook of Diet Therapy*, should the decision be made to combine the soft, the low-fiber, and bland diets into one? If so, what would it be called, and might it only add to the perplexity of the problem at hand?

Perhaps now is the time to evaluate the situation and determine if we are heading in the right direction. As with all other diets, bland diets are prescribed by the physician, and there are nearly as many translations of foods to be allowed as the number of physicians ordering them. Is there a need for the so-called "bland diet"? Would "adapted normal diet for gastro-intestinal diseases" be a more suitable name? It might be timely to approach solution of our dilemma through an intensive endeavor directed toward two-way dietitian-doctor education, with the welfare, idiosyncrasies, and digestive capabilities of the patient in focus.

To emphasize our responsibility in avoiding unnecessarily restricted dietary treatment, Palmer's thought-provoking report (Military Med. 118: 195, 1956) may be cited. He reports experiences in the treatment of eight hundred patients with proved duodenal ulcer in a military general hospital. Efforts were directed at treatment of the patient and his illness as a whole, with de-emphasis on the lesion in the duodenum. The regimen was geared to provide an individual approach to each patient's problem. The features which were common for all patients were normal diet, absence of prescribed medications, and interviews.

It was concluded that this approach meets the military problem of duodenal ulcer more realistically and more effectively than does the classical approach, which is directed at the ulcer crater, with emphasis on diet, acid neutralization, and spasmolysis.

Again, it was concluded that what is best for the military patient is best for the military service. The important benefit was the patient's acquisition of the ability to support his illness by himself, once his attention has been turned from his ulcer crater to his whole illness. As the patient accepted the responsibility of his illness, his motivation for duty assumed more mature proportions.

Doris Johnson, Ph.D., *Director of Dietetics, Grace-New Haven Community Hospital, New Haven, Connecticut:*

As you well know, the bland diet has long been of interest to me and I was very intrigued with Dr. Gray's remarks at the Annual Meeting in Milwaukee. It is indeed gratifying to have Dr. Gray speak in terms of liberalization, and I trust he will be able to influence others in the medical profession to follow his line of thought.

I would very much approve of working out a basic plan for the soft, bland, and low-fiber diets. We have the precedent of the exchange lists for planning the diabetic diet to indicate that a majority of people will agree on and use a plan developed by our Association.

The key to the successful use of a basic diet plan which can be simply modified for these three similar diets is "individualization," as Dr. Gray points out. Here, again, is emphasized the value of the selective menu for modified diets. Because there is so much empiricism in the bland diet regimen, it is high time we again reviewed it and brought in current thinking. It does not seem to me impossible to do the three things Dr. Gray suggests.

To get the widest acceptance of a diet plan as proposed, I would like to see us have a joint committee with the American Medical Association to plan the regimen and then have some publicity given in the Journals of both Associations so that the regimen will be brought to the attention of both the medical and dietetic professions. Extensive education of both dietitians and doctors will be necessary. Indications are that there are too many of both who have not yet even arrived at the 1947 era of thinking.

Beverly Collier, *Clinical Nutritionist, Dairy Council of Northern New Mexico, Albuquerque:*

After helping people modify their diets for the past seven years, I am becoming more and more confused about the "bland" diet. Why am I confused? I have not found one single food item that everyone can tolerate.

The procedure that I have been using is to plan the diet to meet each individual's food tolerance rather than to hand him the usual list of bland foods. Still the diet we plan does not always coincide with that in many diet manuals.

I would like to see us omit the bland diet as such, and I am certainly interested in our publicizing the benefits of individualizing dietary treatment instead of confronting the patient with long lists of "irritating," "non-irritating," and "good and bad" foods.

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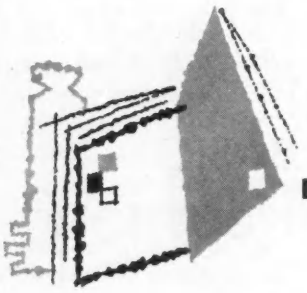

BOOK REVIEWS

The Importance of Overweight. By Hilde Bruch, M.D. New York: W. W. Norton & Company, Inc., 1957. Cloth. Pp. 438. Price $5.95.

Are you confused with the opposite poles represented in the debate on the "physiologic *vs.* the psychologic" causes of obesity? Have you been wishing for a balanced blend of metabolism, culture, and psychiatry directed to the "Importance of Overweight"? If so, you will find this book refreshing, readable, and full of new and better formulations for further study.

The author, originally a biochemist, later a pediatrician, and finally a specialist in psychiatry and psychoanalysis, brings you a story of her observations and experiences of the past twenty years.

Dr. Bruch debunks "simple" obesity as being "caused" by overeating and inactivity. These she regards as *symptoms* of underlying causes which in themselves are of great physiologic and psychologic complexity. With this thesis, she logically considers each patient an *individual* problem, and as such he must be considered a totality of his own individual biochemistry and environmental experiences.

She laments the fact that losing weight has been made a goal in itself to the extent that it has become a "national obsession." Even mild obesity in our culture is considered a vice, and the obese individual is looked upon as greedy and ugly. This cultural attitude on the part of professional and lay people she feels has rebounded to enlarge and extend the problems of obesity.

Although Dr. Bruch feels that more is known about the psychologic than the physiologic factors, she devotes a good part of her book to "What Is Overweight?" "The Case for Heredity," "Physical Growth in Obesity," and "Basic Facts on Basal Metabolism and Metabolic Disturbances."

Psychologic factors are described under such topics as "The Mental Development of Obese Children and the Family Frame," "Thin Fat People," "The Physician's Problems," and "Practical Aspects." Her observations emphasize again the delicate equilibrium between food intake and mental health. The use of food as a defense against anxiety and depression, as support during upsetting circumstances, or even as an excuse for certain difficulties is described in bits from her own experience with patients. Are some patients harmed by indiscriminate use of diets? Yes, they are. Her observations point up the fact that overemphasis on a mechanical losing of weight alone overlooks the importance of the satisfaction of vital human needs.

However, in spite of the many psychologic hazards which Dr. Bruch convincingly describes, she does not leave the impression that weight control is always useless or contraindicated. She points out that many people feel better and healthier when they reduce, and they are compensated by an increased joy in living. She stresses, however, that even for these reducers it is necessary to select a suitable method nutritionally and psychologically.

Before embarking on a program, Dr. Bruch advises certain preliminary considerations.

(a) *Is* the patient overweight? The fact that he deviates from a statistical norm does not necessarily mean that his weight is undesirable for him.

(b) Why is the patient overweight? Under what conditions did it develop and what has maintained it? A study of the weight curve throughout life is necessary. A weight curve with many ups and downs suggests a need for psychologic evaluation. What are the ups and downs and to what events are they related? Or, a weight curve which has been consistently high since childhood suggests again a need for psychologic evaluation. If there were earlier efforts at reducing, how did the patient go about it and why did he fail? What function does weight and excessive eating play in his present life and how can this be replaced by something as satisfying or better?

(c) Why does the patient want to reduce? What difference will it make to the patient to be fat or thin? How will it affect the patient's life and what does he and the people around him expect from his being thin? Of all the preliminary considerations, perhaps his motivation is the most important. A rational goal might include looking better and feeling healthier. On the other hand, some express unrealistic and unreasonable expectations in terms of glamor, beauty, and success.

(d) Is this the proper time for dieting? If a disturbing influence is present in the environment, if increased responsibility has been imposed, it would be better to delay the dieting until another time.

In approaching the matter of a diet itself, Dr. Bruch says that she has rarely seen calorie-counting succeed with people who are really obese. The very fact that they are so fat indicates lack of self-control. Such patients do not want the dilemma of choice or denial at each meal. Therefore, she feels that a prescribed outline of meals which is definite, individualized, and carefully written out will be more effective. With a disturbed patient, she feels that a bizarre diet, such as a liquid formula, may even be easier for him to follow since it removes him still further from the dilemma of choice and denial.

The most important problem of all—a long-range plan for eating to maintain the "ideal" weight—is scarcely touched. Patients cannot go back to their "customary diets" without regaining weight. How can more mature patterns of eating be developed? Is it possible to find new food habits which are sufficiently enjoyable and satisfying that he can adopt them without continual stress?

While the discussion of the practical aspects seem much too brief and fragmentary to be helpful, the over-all approach to obesity as a dynamic interaction between biologic make-up and interpersonal and cultural influences will make it "must" reading for every dietitian and nutritionist who is working with obese people.

The Hawaii Hostess Cookbook. By the Hawaii Dietetic Association. Honolulu, T.H.: Aloha Books, 1956. Paper. Pp. 44. Price $1.25.

This book includes fifty tested, favorite Island recipes which have been adapted for quantity preparation by members of the Hawaii Dietetic Association. Although some of the recipes are "old favorites," they are different because certain seasonings and food items typical of the Islands are used.

Of particular interest to those who plan for catering services and parties that are "different" or have a theme, are the suggestions for menus for "Island entertaining." These menus and recipes easily could be adapted for entertaining on the Mainland.

Many practical and interesting tips for quantity preparation and services are included at the end of each section. One section on guides for quantity cooking includes, among other things, suggestions for seasoning with a flair, quantities to buy for fifty, standard weights and equivalents, standard substitutions, and health safeguards.

The Hawaii Dietetic Association should be commended for this worthwhile project. This book, with its colorful

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cover, attractive illustrations, and interesting recipes and menus, will make a fine addition to any collection of quantity recipes.—*Beatrice Donaldson, Ph.D., Department of Foods and Nutrition, University of Wisconsin, Madison.*

German Cook Book for Quantity Service. By Caleva. New York: Ahrens Publishing Company, Inc., 1957. Cloth. Pp. 312. Price $6.50.

In presenting the recipes for authentic German dishes, Caleva had in mind the alert dietitian and the progressive food service operator. Among his collection of 630 recipes are many items to add a distinctive touch to ordinary menus and to please clientele who appreciate hearty foods with a touch of subtle flavoring.

Caleva removes the cloud of mystery from formulas for many famous German specialties by giving credit where credit is due—to the discriminating use of sour cream, fresh dill, caraway seeds, good wines, and other seasonings which contribute to this delicious fare. Not only does he tell *what* goes into the making: he also tells *how much* in amounts which can be accurately weighed or measured.

The recipes are set up to yield twenty-five servings. Clear, step-wise procedure accompanies each recipe to give further assurance of quality production. The ingredients listed are readily available so that the temptation to substitute or modify is minimized.

Recipes for a wide variety of items, from appetizers through desserts, are included. Introductory remarks for several sections of the book encourage the operator to try new and different menu items for increased customer satisfaction and, subsequently, for increased profit.

Although reading every section of Caleva's book makes you want to run to the nearest kitchen and begin to cook some delectable morsel, the sections on vegetables and sauces are especially interesting. These two sections alone could do much to lift the average menu out of the doldrums.

Actually Caleva's *German Cook Book* has quite a cosmopolitan air which would give it added interest for those who lean toward French, Italian, Scandanavian, or other European cuisine. Many recipes which originated in neighboring countries have been adapted, with the German touch, to make up this collection. The names of all recipes are given in German, as well as in English—just in case you want to add that "special touch" to your menu.

A glossary of 268 German terms, an excellent index, and conversion table for items frequently used in the recipes complete the volume. If you are interested in presenting Old World fare with a modern flair in production methods, you will not want to miss *German Cook Book for Quantity Service.*—*Pearl Jackson Aldrich, Ph.D., Food Service Laboratory, Michigan State University, East Lansing.*

Hospital Trends. By Louis Block, Dr. P. H. Chicago: Hospital Topics, 1956. Fabricoid. Pp. 222. Price $5.

This book is a comprehensive compilation of figures on all phases of hospital operation and administration. Each section was originally published in the magazine, *Hospital Topics*. The author, who is Chief, Research Grants Branch, Division of Hospital and Medical Facilities, U. S. Public Health Service, has gathered together data and statistics on the most readily measurable factors of hospital utilization and operation and their application to planning and trend development.

Separate chapters deal with statistics for the following types of "average" hospital: short-term, long-term, mental, tuberculosis, and federal. In each chapter, figures are presented on: the number of full and part-time dietitians, as well as a departmental breakdown. For the dietary department, the data include percentage of hospitals with: dietitians, central food service layout; decentralized food service layout; selective menus for all patients, for private patients only, and those not offering selective menus for any patients; manual and centralized dishwashing; manual and decentralized dishwashing; mechanical and centralized dishwashing; and mechanical and decentralized dishwashing.

Other statistics of a more general nature included in this book cover such topics as: average size of hospitals; daily patient census; length of stay and bed occupancy; income, expenses; rates; salaries; and financial aspects of hospital maintenance and operation, including expenditure controls, budget, and cost analysis.

RECENT BOOKS RECEIVED

Expectant Motherhood. 3rd edition, revised. By Nicholson J. Eastman, M.D. Boston: Little, Brown & Company, 1957. Cloth. Pp. 198. Price $1.75.

Teaching Nutrition. By Mattie Pattison, Helen Barbour, and Ercel Eppright. Ames, Iowa: Iowa State College Press, 1957. Cloth. Pp. 212. Price $3.95.

The American Fluoridation Experiment. By F. B. Exner, M.D., and G. L. Waldbott, M.D. New York: The Devin-Adair Company, 1957. Cloth. Pp. 277. Price $3.75.

Essentials of Nutrition. 4th edition. By Henry C. Sherman, Ph.D., Sc.D., and Caroline Sherman Lanford, Ph.D. New York: Macmillan Company, 1957. Cloth. Pp. 505. Price $4.90.

Foods of Old New England. By Marjorie Mosser. Garden City, N. Y.: Doubleday & Company, Inc., 1957. Cloth. Pp. 428. Price $4.95.

Real French Cooking. By Savarin. Garden City, N. Y.: Doubleday & Company, Inc., 1957. Cloth. Pp. 309. Price $4.50.

The Home Book of Spanish Cookery. By Marina Pereyra de Aznar and Nina Froud. New York: M. Barrows and Company, 1957. Cloth. Pp. 248. Price $3.75.

The Well-Fed Bridegroom. By Margaret Williams. Garden City, N. Y.: Doubleday & Company, Inc., 1957. Cloth. Pp. 192. Price $3.

The New Basic Cook Book. Revised and enlarged. By Marjorie Heseltine and Ula M. Dow. Boston: Houghton Mifflin Company, 1957. Cloth. Pp. 718. Price $4.95.

To the Bride. By Mary I. Barber and Dorothy Hurst. Evanston, Ill.: Standard Rate and Data Service, 1956. Cloth. Pp. 407.

Reduce and Stay Reduced. Second edition. By Norman Jolliffe, M.D. New York: Simon and Schuster, 1957. Cloth. Pp. 266. Price $3.50.

Teaching Nutrition in Nursing. 4th edition. By Henderika J. Rynbergen. Philadelphia: J. B. Lippincott Company, 1956. Cloth. Pp. 142. Price $2.75.

How to Overcome Colitis. By Joseph F. Montague, M.D. New York: The Citadel Press, 1956. Cloth. Pp. 288. Price $4.

Laboratory Manual to Accompany Fundamentals of Chemistry and Applications. 2nd edition. By Charlotte A. Francis, Edna C. Morse, R.N., Ed D., and Helen Rohr Chadwick, R.N. New York: The Macmillan Company, 1956. Paper. Pp. 190. Price $3.25.

Symposium on Vitamin Metabolism. Nutrition Symposium Series Number 13. New York: The National Vitamin Foundation, Incorporated, 1956. Paper. Pp. 118. Price $2.50.

International Congress of Gastroenterology. Fifth Meeting of L'Association des Societes Europeennes et Mediterraneennes de Gastro-Enterologie. London, July 18–21, 1957. Bazel, Switzerland: S. Karger, 1957. Cloth. Pp. 766.

Classic Cooking From India. By Dharam Jit Singh. Boston: Houghton Mifflin Company, 1956. Cloth. Pp. 278. Price $4.

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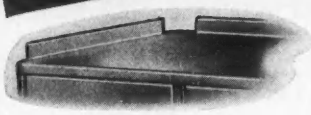

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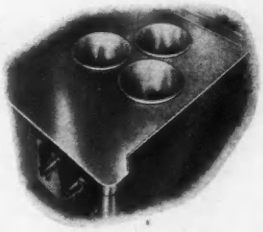

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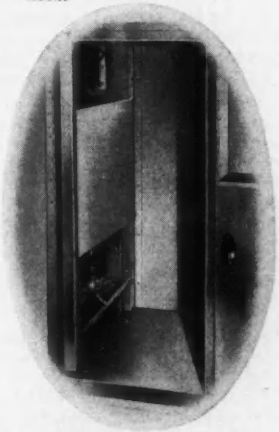

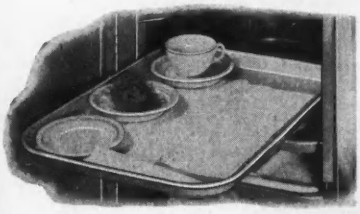

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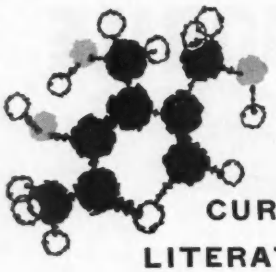

CURRENT LITERATURE

Contributed by Janette C. Carlsen and Ethel M. Miller, The Johns Hopkins Hospital, Baltimore; Clara Karl, University of Chicago Clinics; and the Journal Staff

THE AMERICAN JOURNAL OF CLINICAL NUTRITION

Vol. 5, March-April, 1957

* Psychological effects of thiamine restriction and deprivation in normal young men. J. Brozek. —p. 109.
* Taste mechanisms in preference behavior. C. Pfaffman.—p. 142.
* The regulation of food intake. Some experiments relating behavioral, metabolic and morphologic aspects. J. Anliker and J. Mayer.—p. 148.
* Cultural factors in dietary choice. D. Lee.—p. 166.
* The components of food acceptance and their measurement. F. J. Pilgrim.—p. 171.
* Psychologic factors in weight control. C. M. Young, K. Berresford, and N. S. Moore.—p. 186.
* The emotional significance of the preferred weight. H. Bruch.—p. 192.

Psychologic Effects of Thiamine Restriction. This study is concerned with the impact of a thiamine-free diet. It consisted of four periods of study: (a) a month of standardization, (b) partial restriction (three levels) of thiamine, (c) acute thiamine deprivation, and (d) thiamine supplementation. The appearance of subjective symptoms and objective signs of thiamine deficiency reflected the level of thiamine intake during the period of partial restriction. Thiamine supplements restored appetite and normal attitudes of the subjects. Large changes in the direction of deterioration were observed during the period of acute deprivation but were reversed through supplements. Motor speed, eye-hand coordination, and other manual reactions deteriorated during thiamine deprivation but were restored dramatically, both as to speed and degree, with supplementation.

Taste and Food Preference. The chemical senses and the behavior they control present a kind of model "stimulus-response" system of behavior, sometimes designated as "motivated behavior." The study of the lower senses and the behavior they instigate is significant in understanding behavior in general. Certain electrophysiologic observations on taste sensitivity and the correlation with behavioral responses to the same stimuli were made. An approximate agreement between the concentration ranges for the two responses was noted for the mean response curves, especially for suprathreshold effects. Receptor function was studied under conditions that modify the physiologic state of the organism and with which pronounced changes in preference behavior have been reported. Under these circumstances, no changes in the gustatory response was noted. It is concluded that changes in behavior under these conditions reflect not a change in the peripheral afferent neural message but changes in its significance for central neural processes.

Regulating Food Intake. Experimental evidence is presented which supports the view that the hypothalamus contains a "feeding" center and a "satiety" center. The satiety center obtains its information from the blood stream via glucoreceptors. Destruction of the satiety center acts to release the feeding center from the inhibitory influence of the satiety center, and this results in hyperphagia. Changes in blood glucose and liver glycogen, resulting from feeding and fasting and from parenteral injections of glucagon and insulin, are likewise in conformity with the glucostatic theory of the regulation of food intake. Finally, the fact that intravenous glucose is effective as a reward in operant conditioning indicates that rats, and presumably, other animals, are capable of discriminating changes in blood glucose.

Cultural Factors in Dietary Choice. From the very first, feeding is culturally structured. In our society, we define it—at least academically—as nutrition. The culture may present food as a means for stilling hunger, or it may regard eating as a duty or a virtue, as a gustatory pleasure, or as a social or religious communion. Nutrition and satiety may be secondary. The culture also determines what is recognized as food and when to have an appetite for what. Any attempt to affect diet must deal with the cultural factors in dietary choice. It must take into account what it is that the food mediates, so as not to destroy values which cannot be replaced with sheer nutrition.

Components of Food Acceptance. The components of food acceptance are divided into three areas: sensations, attitudes, and physiologic phenomena. The relationship between methods of measurement and components of food acceptance is given in a figure diagram.

Psychologic Factors in Reducing. Nutrition and behavior are definitely related. Behavior affects nutrition, leading to over- or under-nutrition which in turn may lead to further behavior problems. Obesity may be associated with varying states of emotional adjustment from essentially normal to seriously disturbed. Emotional adjustment scores obtained with the Bell Adjustment Inventory showed a high positive relationship with dieting performance. Patients seem to fall into one of three groups: (a) those who are reasonably stable with few or no emotional problems; (b) those who are tense, anxious, or insecure; and (c) those who appear to have deeper emotional problems. Patients in the first group had a high degree of success in reducing, the second group was less successful, and the last group consisted largely of failures. It seems advisable to screen patients by trained personnel before advising them to follow a weight-reducing regimen. Also, the emotional state may affect biochemical and physiologic metabolic responses. As weight reduction progressed, negative calcium balances were observed on calcium intakes which, prior to reducing, had led to retention. There is no physiologic explanation, but this is thought to be due to emotional stress.

"Preferred Weight." "Preferred weight" represents the weight the organism, in its mysterious self-regulatory capacity, prefers as its pattern of adaptation. It may not coincide with what the physician or nutritionist prefers, or even with what the person professes to prefer, but it seems to be necessary to consider this true weight. To determine the percentage deviation from an assumed normal weight and to designate a certain deviation as abnormal are completely arbitrary and misleading procedures, saying nothing about the competence with which an individual functions. Weight needs to be looked upon, like other biologic functions, as something which each organism uses in its own preferred pattern. Interferences with this preferred pattern, or changes by voluntary decision, may result in many problems. For many people, weight is an important factor in their adaptation; it may serve as a protection against more serious illness. In this age of large-scale weight control programs, it is necessary to keep the mental health aspect in mind, that it is dangerous without having first assessed and corrected the underlying disturbances to interfere with "preferred weight"—an adaptive pattern.

AMERICAN JOURNAL OF DIGESTIVE DISEASES

Vol. 2 N. S., March, 1957

* Value of diet in treatment of peptic ulcer. Editorial.—p. 130.

Diet in Treating Peptic Ulcer. The factors which affect the healing of experimental ulcers and those which determine the clinical course of patients with ulcers may be considerably different. The studies presented here tend to de-emphasize the importance of dietary treatment of peptic ulcer and indicate that there is no advantage to limiting the diet to bland foods. These observations do not note any effect of diet on the course of the ulcer. Each patient must be studied and treated as an individual, and the factors responsible for his ulcer must be determined if possible.

THE AMERICAN JOURNAL OF NURSING

Vol. 57, April, 1957

* No eggs for breakfast. H. H. Hughes.—p. 470.

Teaching Nutrition in Underdeveloped Areas. The difficulties of teaching backward and primitive peoples are discussed, and several amusing and instructive experiences are related to illustrate the often peculiar, often very sensible motivations of their behavior. It is the author's opinion that much good

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scientific knowledge goes to waste today because it does not bridge the gap from teacher to student, in civilized as well as backward areas. It is recommended that the good teacher not only know the facts to be taught, but also know and understand the basic attitudes of those she wants to teach. Why an agreeable Puerto Rican mother refuses to give her children eggs for breakfast can only be understood by a teacher adept at translating the symbols in which people think.

AMERICAN JOURNAL OF PHYSIOLOGY

Vol. 188, January, 1957

* Response of dogs to long-term cholesterol feeding. K. H. Shull and G. V. Mann.—p. 81.

Long-Term Cholesterol Feeding. Hypercholesteremias were maintained in two female dogs for a period of four and three and a half years, respectively, by cholesterol feeding. Serum beta-lipoprotein levels were grossly elevated throughout these periods. Neither the level of fat calories nor the caloric balance appeared to affect significantly the serum lipid levels. Gross and microscopic examinations performed at autopsy on these two dogs failed to reveal any abnormalities in the cardiovascular system or liver.

ARCHIVES OF PEDIATRICS

Vol. 74, March, 1957

* The protein efficiency of various Pablums and the beneficial effect of addition of various amino acids and vitamin B_{12}. B. Sure.—p. 81.

Protein Fortification. It has been demonstrated that certain infants do not utilize efficiently the lysine of milk. It has also been shown that the addition of several of the essential amino acids has improved the nutritive value of the proteins of cereal grains. Since Pablum is used so extensively in infant nutrition, a study was made of the relative biologic values of the proteins in several types of Pablum and of the influence of addition of vitamin B_{12}, and three amino acids, L-lysine, DL-methionine, and DL-threonine. It is felt that if the cost of amino acids could be reduced, the enrichment of cereal grain products could help reduce malnutrition all over the world.

THE BRITISH JOURNAL OF NUTRITION

Vol. 11, No. 1, 1957

* Biological value of the proteins of a variety of fish meals. A. E. Bender and S. Haizelden.—p. 42.
* Effect of pantothenic acid on growth and blood picture in the rat. A. D. Blunt, E. M. Cheesman, and A. M. Copping.—p. 62.
* Effect of pantothenic-acid deficiency on certain organs of the rat. C. D. Combridge and A. M. Copping.—p. 67.
* The specific dynamic action of food and the satiety mechanism. R. Passmore and F. J. Ritchie.—p. 79.
* The energy expenditure and food intake of middle-aged Glasgow housewives and their adult daughters. J. V. G. A. Durnin, E. C. Blake, and J. M. Brockway.—p. 85.
* The diets of middle-aged Glasgow housewives and their adult daughters. J. V. G. A. Durnin, E. C. Blake, and J. M. Brockway.—p. 94

Biologic Value of Fish Meal Protein. A series of commercial fish meals and deodorized fish flours intended for human consumption were examined for net protein utilization (N.P.U.) and digestibility by the carcass-analysis method. N.P.U.'s ranged from 18 to 80. There was no consistent evidence of serious damage resulting from the defatting and deodorization whereby fish meals are converted to edible fish flours.

Effect of Pantothenic Acid on Growth and Blood. Rats were fed from weaning or from seven days after weaning on a purified diet containing all vitamins except pantothenic acid. They were dosed daily with 25, 50, or 100 mg. pantothenic acid either after two weeks' deprivation or from the beginning. Little gradation of response in growth was observed. Male rats were more sensitive than females in their growth response to pantothenic acid. Although a daily dose of 25 mg. pantothenic acid was almost adequate for growth, it did not completely prevent the greying of the animals' coats. In rats deprived of pantothenic acid, the red-cell count increased and the cells were microcytic and hypochromic. There was no anemia and the number of white cells did not change.

Pantothenic Acid Deficiency and the Adrenals. Organs including the heart, liver, kidney, and adrenals from rats on purified diets with and without pantothenic acid and on a stock diet were examined. Marked changes were seen only in the adrenal glands, where the size and lipid content of the zona glomerulosa were increased in rats totally deprived of pantothenic acid and in those having small curative doses. Increased lipid was found also in the zona fasciculata of the animals recovering from deprivation. These changes are contrasted with those seen in the adrenal glands of pyridoxine-deficient rats.

Satiety and S.D.A. The results in this paper are consistent with Brobeck's hypothesis that variations in heat production could be part of a mechanism producing satiety. Energy exchange in man during the first hour after a meal was investigated. The rises in temperature were so small as to make quantitative assessment very difficult. Oxygen consumption increased immediately after a meal and the specific dynamic action (S.D.A.) of food appears to have no latent period. Other factors besides S.D.A. must also contribute to the satiety mechanism, and individual variations are important.

Caloric Expenditure Related to Housework and Age. The energy expenditure and food intake of middle-aged, middle-class housewives and of their adult working daughters (saleswomen) were measured. The mean daily intake of calories was 2100 for the mothers and 2225 for the daughters; the mean expenditures were 2090 and 2255 respectively. Possible explanations for the quite moderate demands of housework on energy expenditure are discussed. Since the activities of mothers and daughters were not unlike in terms of energy expenditure, it was possible to derive the decrement in caloric expenditure due to age: a decrement of 3 per cent for each decade over the age of twenty-five years is in keeping with these results.

Food Intake of Homemakers and Adult Daughters. The food intake of a group of middle-aged housewives and their adult daughters was measured and the adequacy of these diets was determined. Most of the essential nutrients were taken in what is believed to be sufficient quantity, but several mothers and daughters had intakes calculated to be low in calcium, iron, riboflavin, and ascorbic acid.

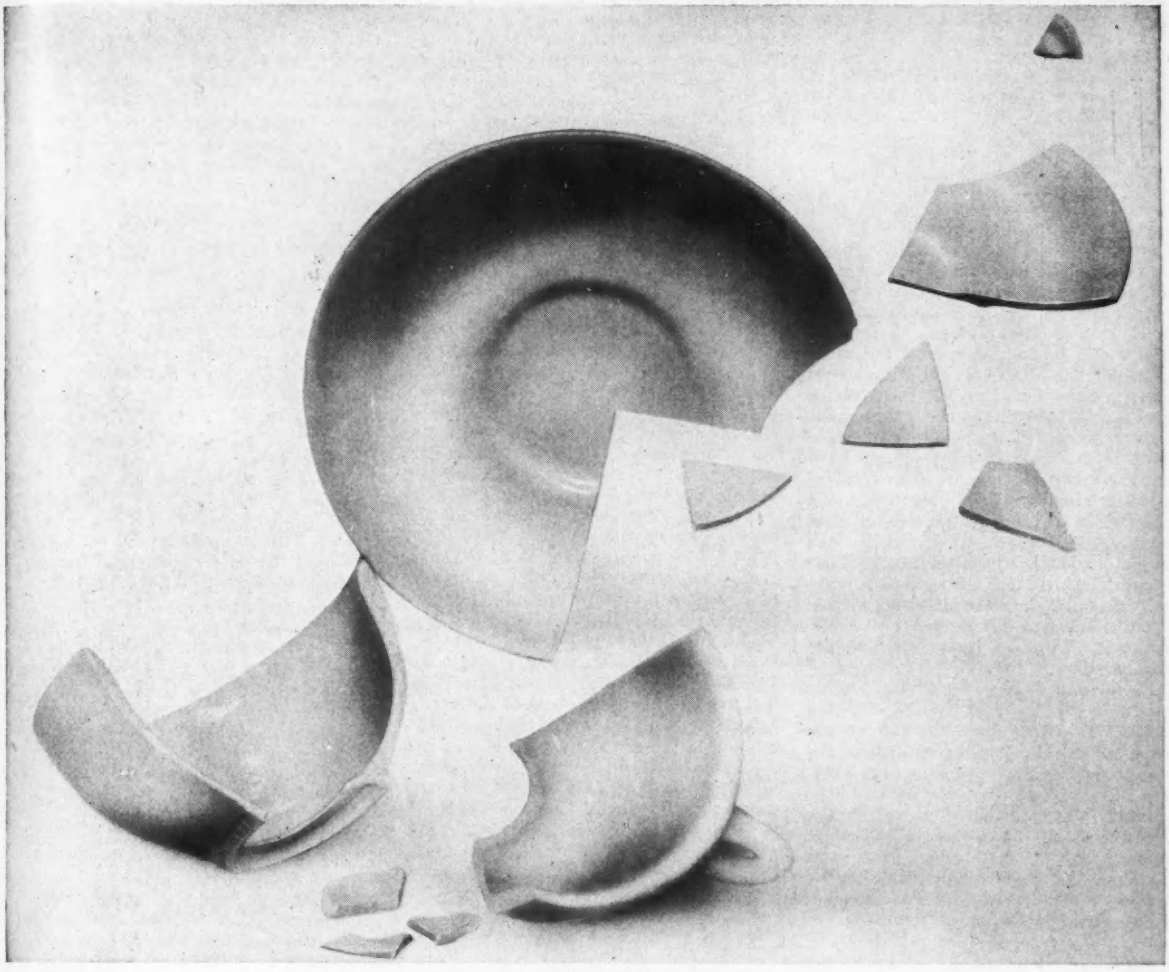
BRITISH MEDICAL JOURNAL

No. 5013, February 2, 1957

* Clinical significance of weight trends during pregnancy. A. M. Thomson and W. Z. Billewicz.—p. 243.
* Calcium metabolism and bone changes in sarcoidosis. G. Mather.—p. 248.

Weight Gain during Pregnancy. An analysis of the weight gains of primigravadae, not subjected to weight regulation, confirmed that the average rate of gain is higher in pre-eclampsia than in normal pregnancy, and that the incidence of pre-eclampsia rises as the rate of weight gain increases. These facts are of little value for predicting pre-eclampsia in the individual case. The incidence of prematurity (birth weight, 5½ lb. [2500 gm.] or less) is highest when weight gains are consistently low, falls as the rate of gain increases, and then rises again with high rates of gain. Pre-eclampsia is an important cause of prematurity in the high but not in the low weight-gain groups. The most favorable outcome of pregnancy—in terms of pre-eclampsia, prematurity, and prenatal death—is associated with a moderate rate of weight gain, at least throughout the second half of pregnancy. A gain of about 1 lb. (454 gm.) a week is suggested as a sound and realistic average. The more rigorous restriction of weight gain which has been advocated is not justified on present evidence and may even be harmful.

Calcium Metabolism in Sarcoidosis. Radiographs of the hands and feet of 120 patients with sarcoidosis have been examined. Bone lesions were found in only nine. Such radiographs are thus of little value in diagnosis. The common association of cutaneous sarcoids with bone disease was confirmed (five out of nine patients). No examples of disturbed calcium metabolism were seen in those with bone diseases. Estimations of serum calcium in eighty-six untreated patients showed hypercalcemia in only four. Hypocalcemia occurred in four. The effects of hypercalcemia are described, with special reference to kidney damage. Examples of hypercalcemia following the treatment of sarcoidosis with calciferol are given and its dangers emphasized. Clinical and biochemical studies support the hypothesis that hypercalcamia in sarcoidosis is due to excessive sensitivity to vitamin D. Control of this complication may be achieved by a diet low in calcium and vitamin D, although cortisone is sometimes necessary.



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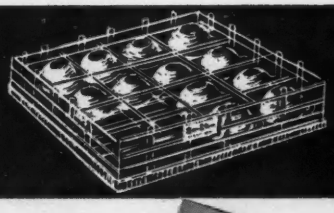

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CANADIAN MEDICAL ASSOCIATION JOURNAL

Vol. 76, February 15, 1957

* Galactosaemia. H. W. Bain, D. H. Bowden, A. L. Chute, S. H. Jackson, A. Sass-Kortsak, and N. F. Walker.—p. 278.

Vol. 76, March 15, 1957

* The study of infantile colic. W. C. Taylor.—p. 458.

Galactosemia. Galactosemia is a congenital, familial, inborn error of metabolism characterized by severe malnutrition, hepatomegaly, presence of reducing substance (galactose) in urine, and perhaps jaundice, cataracts, and mental retardation. Cases are frequently missed because of failure to consider the diagnosis in all cases of jaundice and dystrophy in young infants and failure to test the urine for reducing substance while the patient is receiving milk feedings. It is felt that all of the various manifestations are best explained by direct toxic action of galactose, and a theory as to the pathogenesis of liver damage is presented. All signs and symptoms, except perhaps cataracts and mental retardation, are reversed when milk products are removed from the diet. Results of various laboratory tests, especially those of liver function, are presented.

Infantile Colic. In a comparative study of one hundred infants suffering with colic and one hundred infants not so afflicted, the factors related to the onset and severity of colic were: age, time of day, and emotional state of the mother. The addition of cereal to the feeding of the three-month-old babies seemed to alleviate colic, but as a therapeutic measure the addition of cereal was disappointing. The management should consist of exclusion of physical disease, exclusion of food allergies, and allowance of liberal amounts of formula. The mother also needs constant reassurance and guidance.

CEREAL CHEMISTRY

Vol. 34, March, 1957

* Effect of baking on the nutritive value of proteins in wheat bread with and without supplements of nonfat dry milk and of lysine. A. R. Sabiston and B. M. Kennedy.—p. 94.

Effect of Baking on Proteins in Bread. Protein quality of whole-wheat bread and of the unbaked ingredients containing 0, 3, 6, and 12 per cent nonfat dry milk and 0.166 per cent L-lysine and of white bread containing 6 per cent nonfat dry milk was determined by rat-growth studies. Increasing quantities of milk resulted in increased protein efficiency ratios. The quality of the white bread containing nonfat dry milk was better than that of the whole-wheat water bread and somewhat inferior to that of whole-wheat bread containing 3 per cent nonfat dry milk. Whole-wheat bread containing 0.166 per cent L-lysine, equivalent to the amount of lysine in 6 per cent nonfat dry milk, had a protein efficiency ratio close to that of the bread containing 6 per cent nonfat dry milk. This was not essentially different from that of the whole-wheat bread baked without lysine but supplemented by lysine in the diet. The protein efficiency of all of the breads was approximately 20 per cent less than that of their unbaked ingredients. Protein value of bread dried in a dehydrator at temperatures up to 50°C. was not significantly different from that of bread dried at room temperature.

FOOD AND NUTRITION NOTES AND REVIEWS

Vol. 13, November-December, 1956

* Spinach, oxalic acid and calcium. W. E. Garran.—p. 101.

Spinach, Oxalic Acid, and Calcium. The results of several investigations have shown that many if not all varieties of spinach greens provide an excess of oxalic acid which could render unavailable some of the calcium of the total diet. Experiments with rats have shown, however, that there may be other factors not yet understood which also affect the availability of calcium. Studies on human subjects fed on spinach have not led to any definite conclusions. Some theoretical effects of oxalic acid on calcium-rich foods are indicated by the following example: if spinach and New Zealand spinach (oxalic acid 0.89 per cent) were eaten, the excess oxalate in 100 gm. could take up the calcium from 8 to 9 oz. milk, a large share of the average milk intake. It is suggested that until more definite evidence is available, nutritional instruction should emphasize consumption of leafy greens other than spinach. The oxalic acid content of rhubarb has also caused some concern.

FOOD TECHNOLOGY

Vol. 11, April, 1957

* Effect of controling environmental conditions during aging on the quality of beef. R. B. Sleeth, R. L. Henrickson, and D. E. Brady.—p. 205.
* Effects of canning on new and familiar sweet potato varieties with particular emphasis on breakdown and firmness. E. R. McConnell and P. B. Gottschall.—p. 209.
* Factors contributing to the storage life of frozen concentrated orange juice. A. H. Rouse, C. D. Atkins, and E. L. Moore.—p. 218.
* Advances in the dehydration of mashed potatoes by the flake process. J. Cording, Jr., M. J. Willard, Jr., R. K. Eskew, and J. F. Sullivan.—p. 236.
* Effect of addition of monosodium glutamate on palatability of frozen vegetables. F. O. Van Duyne, V. R. Charles, M. C. Titus, and E. H. Wheeler.—p. 250.

Environment and Aging of Beef. Shrinkage, cooking loss, organoleptic, and shear values were determined on round, rib, and T-bone steaks from Choice and Good grades of beef. Also, the influence of length of aging period, grade of beef, temperature, relative humidity, air velocity, and ultraviolet radiation on various organoleptic factors were studied. Optimal environmental conditions are not the same for all meat items. There is need for additional research in breeding and selecting animals for tenderness.

Canning Sweet Potatoes. The most frequent complaint from both consumers and canners regarding canned sweet potato quality is the breakdown and loss of firmness. Hence, nine canning varieties were grown under known conditions in two climatically different areas of this country. Some varieties were canned when freshly dug and after definite periods in commercial storage. They were canned as sirup pack and as vacuum pack. Samples were examined periodically up to twelve months after canning, and the results are given. Knowing the importance of these factors may help predict the canning behavior of the varieties under different climatic and storage conditions.

Frozen Orange Juice Concentrates. Cloud or turbidity in the reconstituted juice is a physical characteristic indicative of good quality in frozen concentrated orange juice. Pectin is the naturally occurring colloidal stabilizer that gives viscosity to juices. By inhibiting enzymic activity, the water-soluble pectin is protected from de-esterification. In this work the quantity of pectin present and the pectinesterase activity were investigated. It was found that when pectinesterase was the same, juices with a high pectin content had a longer storage life than those with a low pectin content. When the pectin content was alike, a juice with a high enzymic activity was less stable than one with low activity.

Dehydrated Mashed Potatoes. Potato flakes are a recently developed new and attractive form of dehydrated mashed potatoes. The process as originally developed used a small double-drum drier. This study was done to determine the effects of operating variables and of solids content on the production rate and physical characteristics of potato flakes on a single-drum drier.

MSG and Palatability of Frozen Vegetables. In the majority of comparisons, the addition of crystalline monosodium glutamate or a commercial preparation did not improve the palatability of cooked fresh or cooked stored frozen broccoli, corn, peas, snap beans, and spinach. The results preclude recommending the addition of monosodium glutamate during preparation of vegetables for serving or for freezing.

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

Vol. 163, April 6, 1957

* Saturated fats and serum lipids in atherosclerosis. Foreign Letters-United Kingdom.—p. 1285.
* Enrichment of flour in Great Britain. E. C. Dodds and T. Moran. Correspondence.—p. 1288.
* Cabbage juice. Queries and Minor Notes.—p. 1311.

Vol. 163, April 13, 1957

* Obesity and cultural patterns. Queries and Minor Notes.—p. 1417.

Fats and Atherosclerosis. It has been suggested that atheroma may be associated with high dietary intake of cholesterol, fat, calories, saturated fats, or degerminated cereals. Handel *et al.* found that a diet containing unsaturated fats and no refined cereals lowered serum cholesterol and lipids, but only when the values had been high initially.

Flour Enrichment in Britain. The British milling industry did much

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pioneer work in the enrichment of flour. In 1939, the government took over the control of the milling industry and in July, 1940, gave enrichment statutory authority. Thiamine was added first. War conditions slowed down the progress of this program, but in 1953, white flour milling again was permitted, provided it was enriched with niacin and iron. In 1956 it was found that enriched white flour would maintain the health of the population as well as the high-extraction "national" flour which carried a government subsidy. The subsidy has since been removed, and it is felt that the majority of the people will use enriched flour.

Cabbage Juice. There is no known substance in cabbage juice which should relieve digestive complaints. However, as long as the treatment is harmless, it may be continued within the selected individuals who think it benefits them.

Obesity. It would not be practical to have different standards for different patients, depending on their national background. The best method is still clinical judgment as to whether a person is overweight. When there is any doubt, skinfold thickness should be determined.

THE JOURNAL OF BIOLOGICAL CHEMISTRY

Vol. 224, February, 1957

* The growth effect of D-valine. M. Womack, B. B. Snyder, and W. C. Rose.—p. 793.
* Metabolism of essential fatty acids. V. Metabolic pathway of linolenic acid. G. Steinberg, W. H. Slaton, Jr., D. R. Howton, and J. F. Mead.—p. 841.
* Carbohydrate metabolism in pyridoxine-deficient rats. K. Guggenheim and E. J. Diamant. —p. 861.
* The origin of serum cholesterol in the rat: diet versus synthesis. M. D. Morris, I. L. Chaikoff, J. M. Felts, S. Abraham, and N. O. Fanssh. —p. 1039.

Growth Effect of Valine. Diets containing 1 per cent of D-valine are incapable of supporting the growth of weanling rats even though this intake level of L-valine provides more than enough to permit optimal weight gains. When the D-valine content of the food is raised to 2 per cent, slow growth occurs. However, even at this higher level, the gains are extremely poor as contrasted with those induced by half as much of the L isomer. Either the inversion of D-valine is difficult for the organism to accomplish, or the slow absorption of the amino acid from the intestine and its rapid excretion by the kidneys interfere with its utilization.

Metabolism of Linoleic Acid. Essential fatty acid activity is generally ascribed to a group of higher polyunsaturated fatty acids, including linoleic, linolenic, and arachidonic acids. To determine whether linolenate can be converted to arachidonate, methyl linolenate, labeled with C^{14} in the carboxy group was fed to rats. However, it was found that linolenate is converted, not to arachidonic, but to a different polyunsaturated acid, possibly eicosapentaenoic acid.

Carbohydrate Metabolism in Pyridoxine Deficiency. It has been demonstrated that severe deficiency of pyridoxine adversely affects adrenal function. The purpose of this work was to study the effect of impaired adrenal function on carbohydrate metabolism. It was found that pyridoxine-deficient animals, although showing an increased glucose utilization by muscle, exhibited no deviation from normal carbohydrate metabolism attributable to adrenal insufficiency.

Origin of Serum Cholesterol. Surviving liver slices prepared from animals previously fed a high-cholesterol diet show a depression in the incorporation of acetate-C^{14} into cholesterol. Because of these results *in vitro*, it is believed that cholesterol synthesis in the intact animal is under homeostatic control. In this work the relative roles of dietary and endogenously synthesized cholesterol were studied. Specific activities of serum cholesterol were determined on rats kept on diets containing either high or low amounts of cholesterol. The results show that the relative contribution of synthesis and of exogenous sources to the composition of serum cholesterol is controlled by the diet and that the synthetic contribution is depressed when a diet rich in cholesterol is fed.

THE JOURNAL OF CLINICAL INVESTIGATION

Vol. 36, February, 1957

* The glucose metabolism of patients with malignant disease and of normal subjects as studied by means of an intravenous glucose tolerance test. P. A. Marks and J. S. Bishop.—p. 254.
* Oral sodium loading in normal individuals. K. Markley, M. Bocanegra, G. Morales, and M. Chiappori.—p. 303.
* The absorption of radioiron labeled foods and iron salts in normal and iron-deficient subjects and in idiopathic hemochromatosis. R. B. Chodos, J. R. Ross, L. Apt, N. Pollycove, and J. E. Halkett.—p. 314.

Glucose Metabolism of Patients with Malignant Disease. Intravenous glucose tolerance tests were performed in thirty-six subjects with chronic leukemia, lymphoma, and clinically early epithelial neoplasms, and in nineteen subjects without cancer. Plotting either the log of the total blood sugar concentration against time or the log of the blood sugar concentration in excess of the fasting value against time provided an equally good index of glucose tolerance. The patients with malignant disease had a significantly decreased fractional rate of disappearance of glucose and a significantly lower net rate of disappearance of glucose. Fasting blood sugar concentration of the control and neoplastic groups did not differ significantly. No significant difference in the estimated volume distribution of glucose was found between the two groups. In the patients with malignant disease, inorganic phosphate concentration in the fasting serum was significantly greater and the maximum percentage of all inorganic phosphate was significantly less than in the control individuals. No significant difference was observed in the fall in serum potassium concentration between the two groups.

Oral Sodium Loading in Normal Persons. Sixteen healthy young Peruvian males were given a quantity of an isotopic saline solution equivalent to 10 per cent of body weight in the recumbent position by constant drip via a gastric tube over a period of 24 hr. Renal hemodynamics and electrolyte excretion were studied in twelve of the subjects and plasma volume in eleven. While body weight was increased significantly at the termination of the sodium load, plasma volume did not change significantly. The increase in body weight largely disappeared within 3 hr. after termination of the load. During administration, 58 per cent of the administered sodium and 51 per cent of the administered water were excreted via the kidneys. Concentration and total quantity of sodium excreted in the urine increased significantly at the termination of the sodium load. Total excretion of potassium as well as potassium concentration in the urine decreased after sodium loading. There were no important changes in plasma concentrations of red blood cells, total proteins, or electrolytes.

Absorption of Radioiron from Foods. Ferrous chloride is absorbed far more readily and in greater quantity by normal subjects and by patients with deficient and excess iron stores than is iron present in certain foods (eggs, vegetables). Egg and vegetable iron is not absorbed sufficiently to supply iron in the face of increased loss or increased physiologic needs. Absorption of certain food iron and ferrous chloride in patients with well established hemochromatosis is approximately equal to that observed in normal patients. However, it can be assumed that excess quantities of iron must be absorbed during the developmental phase of this disease. After removal of blood by multiple venesections, absorption of ferrous chloride and egg iron by patients with idiopathic hemochromatosis was markedly increased. Absorption of iron salts was significantly influenced by dietary factors, which may modify the form and solubility of iron in the lumen of the gastrointestinal tract. Further evidence has been presented to support previous data in the literature which indicated that the "mucosal block" to iron absorption is only relatively complete and may not uniformly prevent the excess accumulation of iron in the body.

JOURNAL OF HOME ECONOMICS

Vol. 49, April, 1957

* Ready mixes for chocolate cake. M. H. Morrison. —p. 283.

Cake Mixes. This is a report on a study which examined the possibility of preparing and conveniently storing a home mix for chocolate cake which would compare favorably with a chocolate cake made according to a standard home recipe and at the same time, surpass one of the more highly rated purchased premix chocolate cakes in palatability, lower cost, and shorter preparation time. The mix was developed from readily obtainable ingredients of standard quality and specific measurements and

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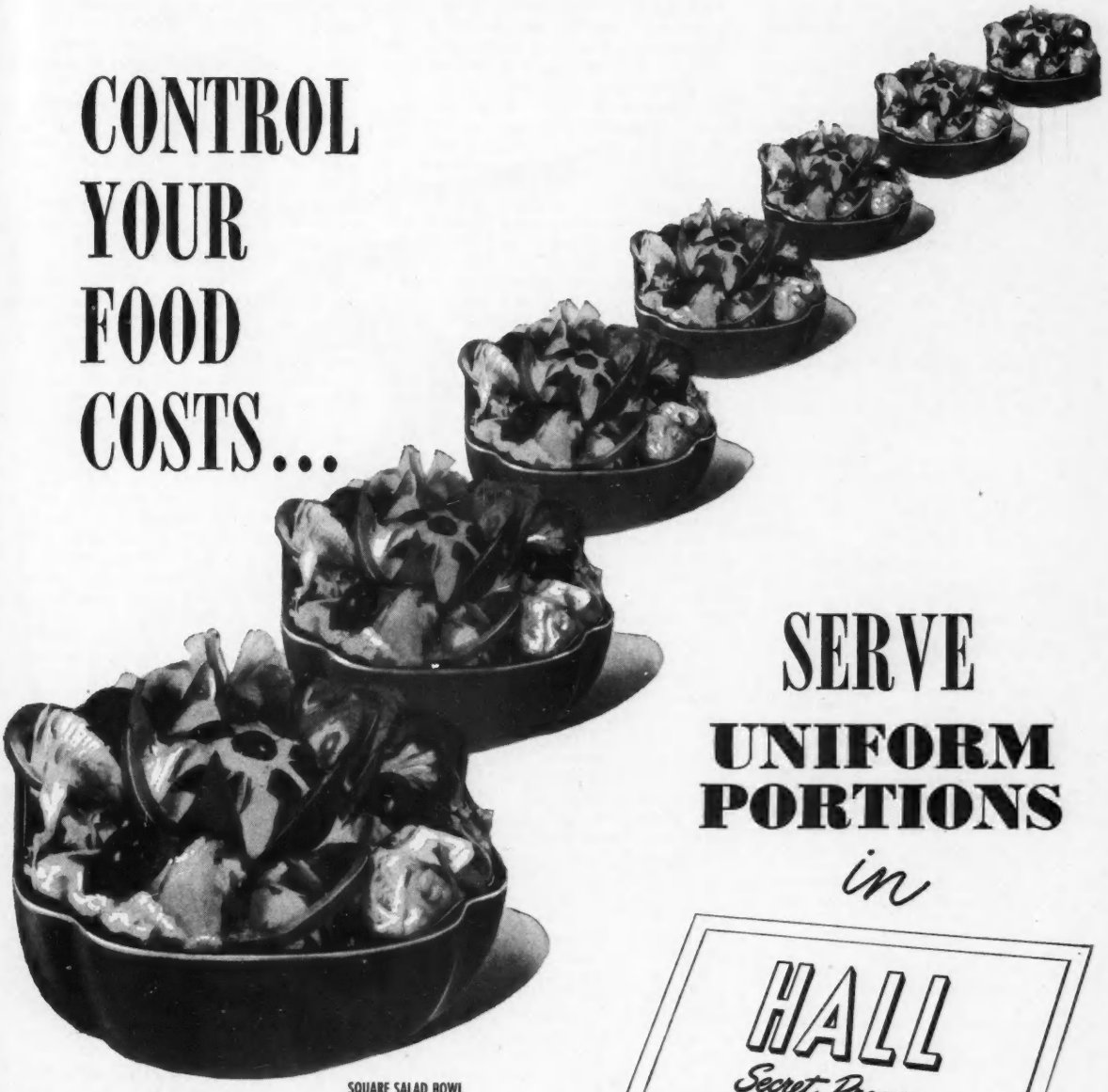

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H-12

was free from complicated mixing instructions. Tests run for six weeks showed that preparation time was longest for the regularly baked cake, shortest for the commercial-mix cake, and intermediate for the home-mix or experimental cake. The experimental cake proved to be least expensive, however, and the commercial mix highest in cost. Cakes baked with the experimental home-mix and commercial pre-mix which had been stored from a period of zero to six weeks did not compare in palatability. The home-mix cake was preferred by all eight judges and rated as much as 20 per cent more flavorful in each six samples tasted. The regularly baked control cake was the judges' second consistent preference and the commercial-mix cake rated third.

THE JOURNAL OF NUTRITION

Vol. 61, January, 1957

* Pantothenic acid deficiency and hypophysectomy. J. J. Barboriak and W. A. Krehl.—p. 23.
* Studies on the kidney in vitamin E deficiency. I. Post-mortem autolysis in kidneys of rats fed a vitamin E-deficient diet rich in long-chain saturated fatty acids. V. M. Emmel.—p. 51.
* Studies on goitrogenic agents in food. I. Goitrogenic action of groundnut. V. Srinivasan, N. R. Moudgal, and P. S. Sarma.—p. 87.
* Improving the nutritive value of flour. VII. Supplementing the protein in flour with amino acids. B. D. Westerman, B. Hays, B. Schoneweis. —p. 137.
* Nutritional studies on rats on diets containing high levels of partial ester emulsifiers. III. Clinical and metabolic observations. B. L. Oser and M. Oser.—p. 149.

Vol. 61, February, 1957

* Nutritional studies on rats on diets containing high levels of partial ester emulsifiers. IV. Mortality and post-mortem pathology; general conclusions. B. L. Oser and M. Oser.—p. 235.
* The effect of powdered milk on dental caries in the rat. J. C. Muhler.—p. 281.
* The energy value of self-selected diets consumed by young college women. A. N. Davis and F. I. Scoular.—p. 289.
* Growth response and liver fat deposition in rats fed bread mixtures with varying levels of nonfat milk solids and lysine. J. K. Jahnke and C. Schuck.—p. 307.

Vol. 61, March, 1957

* The digestion and absorption of fat in dog and man. L. K. Knoebel and E. S. Nasset.—p. 405.
* Weight reduction in obese young men. Metabolic studies. C. M. Young, E. L. Empey, V. U Serraon, and Z. H. Pierce.—p. 437.

Pantothenic Acid Deficiency. The influence of pantothenic acid and growth hormone on the growth process has been investigated in young hypophysectomized rats. With hypophysectomized rats, whether or not they received pantothenic acid, growth hormone induced a marked growth response. The growth rate of the deficient group was about one-half of that of the control. With rats not receiving growth hormone, pantothenic acid-fed animals demonstrated only a slight weight increase, while pantothenic acid-deficient animals failed to gain weight.

Kidney Changes in Vitamin E Deficiency. Weanling rats were transferred to a vitamin E-deficient diet in which 30 per cent of the caloric value was supplied as the free fatty acids obtained from linseed oil. Controls receiving 25 mg. of alpha-tocopheryl acetate twice weekly showed no abnormalities during nearly two years. A newly recognized renal manifestation of vitamin E deficiency is described: in animals kept for six weeks or longer on the vitamin E-deficient regimen, the rate of post-mortem autolysis in the kidney was markedly increased. This abnormality was most conspicuous in the proximal convoluted tubules and was characterized by more extensive histologic changes and more rapid rise in tissue non-protein nitrogen. A relatively high intake of unsaturated fatty acids appears to be necessary for the development of this renal abnormality, since the latter was not found in animals whose diet contained lard in place of the linseed fatty acids. The renal abnormality is completely prevented by the prophylactic administration of alpha-tocopheryl acetate; but when it has become established, the abnormality is not readily reversible by tocopherol therapy. These findings indicate an interrelationship between vitamin E and the role of unsaturated lipids in the structural and functional organization of the kidney.

Goitrogenic Effect of Peanuts. The deficiency of iodine in the diet in relation to simple goiter is now well known. Also, the incidence of goiter with normal dietary intake of iodine has been noticed, thereby indicating the possibility of existence of factors other than iodine-lack in the etiology of simple goiter. There has been an extensive search for goitrogenic agents in foods. The groundnut (peanut), which is used in large amounts in India, is thought to be a goitrogenic agent even in the presence of large amounts of iodine in the diet. In this paper the goitrogenic effect of groundnut was studied using albino rats. The goitrogenic factor appeared to be water soluble and could not be identified with any of the known dietary goitrogens. This goitrogenic effect was inhibited by dietary supplements of small amounts of iodine as potassium iodide.

Effect of Amino Acid Supplementation on Growth. Experiments were conducted using natural foods to determine the effect of adding lysine, tryptophan, valine, and B vitamins to diets high in cereal content and low in meat, milk, and eggs on the growth rate, food efficiency, and deposition of B vitamins and fat in the livers of albino rats. Animals on diets containing 12 per cent meat, milk, and eggs with 37 per cent flour had much better growth rate, food efficiency, and a healthier appearance than those on diets with 44 per cent flour and no meat. The addition of lysine did not improve the diet containing meat, milk, and eggs, but when meat was omitted, the addition of lysine was beneficial. When the animal protein was removed from the diets, even though lysine, tryptophan, valine, additional B vitamins, and iron were incorporated into the flour, which then made up 49 per cent of the diets, the growth rate was below that with animal protein. The animals on the poorer diets deposited larger quantities of B vitamins in the livers, probably because they were not used in the growth processes. Deposition of fat was normal. Evidently, in diets of natural foods with a high cereal content, it is necessary to supply at least small quantities of animal protein along with additional amino acids in order to have healthy animals growing at a normal rate.

Metabolic Effects of Emulsifiers. During rat feeding studies of the partial fatty acid esters (emulsifiers), numerous observations of a biochemical and metabolic nature were made including examinations of the blood and excreta, digestibility studies, and short-term feeding tests of the polyol fraction of certain of these esters. The external appearance of the rats at all levels of partial ester emulsifier intake was quite normal. No evidence of anemia, cachexia, or abnormal neurologic behavior was seen, particularly nothing to indicate the existence of any of the recognized nutritional deficiencies. No evidence of the destruction of dietary thiamine was found, as had been reported previously. Some laxative action was seen with the emulsifiers which had long-chain polyoxyethylene groups. All blood chemical values were within normal limits. Coefficients of digestibility of the fatty acid moieties of the partial ester emulsifiers were determined and used in computing the caloric value of the supplemented diets in this experiment.

Toxicity Studies on Emulsifiers. In this final report on a study of rats fed diets containing high levels of partial ester emulsifiers, observations are presented with respect to duration of life span, causes of death, and post-mortem pathologic findings. Particular attention is directed to the condition of the liver, kidneys, and bladder in view of the questions raised in the report of the Food Protection Committee on the safety of polyoxyethylene stearate as a food additive. These present investigations provide ample justification for the use of the partial ester emulsifiers (Myrj 45, Myrj 52, Span 60, and Tweens 60, 65, and 80) as food additives in concentrations cumulatively totaling a few tenths of 1 per cent of the average American diet, with reasonable assurance that the chronic consumption of such a diet is no hazard to human health.

Powdered Milk and Dental Caries. The ingestion by growing rats of a coarse corn diet containing 30 per cent of heat-processed whole-milk powder resulted in a significant increase in the incidence of occlusal dental caries when compared with results obtained with rats receiving an identical diet containing non-heat-treated whole-milk powder. When the rats received the heat-processed milk diet and in addition received daily supplements of whole-milk powder by stomach tube, the dental caries increment as well as the pronounced failure to gain weight in these animals was returned to the control level. It is suggested that milk powder contains a heat-labile factor which confers some pronounced degree of anticariogenicity mediated by way of the systemic circulation.

Caloric Value of College Women's Diets. Since the caloric value of self-selected diets is of importance in assessing the adequacy of other nutrients, the caloric value of college women's diets

Each of the six soups shown here is a complete soup that needs no preparation other than heating. They are carefully compounded to provide soups that meet the needs of patients on restricted diets.

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APPROXIMATE ANALYSIS

PROTEIN	ASH	FAT (ETHER EXTRACTION)	CARBOHY-DRATES	TOTAL SOLIDS		CALORIES per 100 grams	CALORIES per 6 fl. oz. serving	SODIUM (Na) in Milligrams per 100 grams	SODIUM (Na) per 6 fl. oz. serving
0.47%	0.34%	0.02%	0.57%	1.40%	Dietetic Mushroom Broth	4.45	8.01	5.63 mg.	10.13 mg.
2.44	0.33	0.06	0.51	3.34	Dietetic Beef Style Broth	12.65	23.40	31.60	58.46
0.89	0.70	0.02	3.10	4.73	Dietetic Vegetable Broth	16.55	30.61	38.42	71.08
1.67	0.42	0.17	5.52	7.82	Dietetic Green Pea Broth	31.06	57.77	15.61	29.02
0.92	0.64	0.10	4.95	6.72	Dietetic Tomato Broth	25.00	46.50	24.74	46.02
1.34	0.38	0.03	0.26	2.01	Dietetic Chicken Broth	6.80	12.65	22.00	40.70

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was determined quantitatively. The average height, 163.9 cm., and the average weight, 56.7 kg., of eighty-nine Texas college women are greater than those given by the National Research Council for sixteen- to twenty-year-old girls and for twenty-five-year-old women. Sixty-six of the women were within the weight range for height, eleven were underweight, and twelve overweight. The average caloric intake was 2103 ± 211 and 2101 ± 183 for those under twenty years and 2158 ± 216 and 2141 ± 206 for those over twenty years when distributed on the basis of the height and weight of the individuals. Both groups could use the 13.0 calories per centimeter as a basis for determining total energy intake for maintenance of the desired weight range for height. Actually thirty-three of the younger women and twenty-two of the older group (60 per cent of eighty-nine) consumed this amount of energy and maintained their weight. The same is not true when the fuel needs are based on calories per kilogram. The daily average intakes are lower than the National Research Council values.

Effect of Non-Fat Milk Solids and Lysine on Growth and Liver Fat. It is well known that the cereal grains are deficient in lysine. Hence, fortification of bread with lysine might benefit low-income groups. In this work, the growth response and liver fat deposition of rats fed diets consisting of bread mixtures containing three levels of non-fat milk solids and these same levels of milk solids plus 0.25 parts lysine are reported. Improved growth resulted with increasing milk levels, and the addition of lysine stimulated growth at each milk level. Food efficiency and nitrogen efficiency were increased with increased lysine. The elevation of liver fat levels was small.

Digestion and Absorption of Fat. The composition of fats in the stomach and in different regions of the small intestine of the dog and of man was investigated after feeding various test meals. Absorptive processes were studied and comparisons were made between these studies *in vivo* and those performed by other workers *in vitro*. It is felt that fat may be hydrolyzed in much the same manner *in vivo* as *in vitro*.

Metabolism of Men During Reducing. In previous studies on obese young women, calcium, nitrogen, and phosphorus retentions were less satisfactory during weight reduction. In this present study, the metabolism of these three nutrients was investigated in obese young men (a) in the pre-reducing period, (b) during weight reduction, and (c) during a post-reducing weight-maintenance period. Four of the eight subjects went from nitrogen and phosphorus retention or equilibrium in the pre-reducing period to nitrogen and phosphorus loss during the period of caloric restriction. Relief of caloric restriction was accompanied by return to equilibrium or retention with respect to these nutrients but at a lower level. Only three of the eight men went into calcium deficit, and the deficit occurred early in the weight reduction period with subsequent return to calcium equilibrium in the later stages of reduction. Weight losses in the eight-week reducing period ranged from 13.4 to 27.5 lb. with a mean of 22.6 lb. Weight losses appeared to be related to initial body weights.

JOURNAL OF PEDIATRICS

Vol. 50, March, 1957

* The urinary excretion of amino acids and sugars in early infancy. L. I. Woolf and A. P. Norman.—p. 271.

Amino Acids and Sugars in Infant Urine. Plasma of infants ranging in age from a few hours to eight months, contained far more lysine, ethanolamine, B-aminoiso-butyric acid, and in the case of cord blood, taurine, than did that of older children. These amino acids were also present in high concentration in urine passed at birth. The amount secreted fell progressively thereafter, but at different rates for the different amino compounds. From about the sixth day in full-term infants, or the fourth week in premature infants, the urine contained high concentrations of proline and hydroxyproline, dropping to the very low levels normal for older children by the fifth to the seventh month. About a third of the urine specimens, particularly those from premature infants, contained more lysine and often more cystine than those from older children. Glucose was present in about one-third of the specimens in concentrations slightly exceeding those found in older children. Fetal urine contained small amounts of fructose and glucose and, in one case, a sugar tentatively identified as mannose.

NURSING OUTLOOK

Vol. 5, March, 1957

* The supervisor and the consultant. M. S. Rumrill.—p. 164.

Consultant Meets Supervisor. Supervisors are apt to have vague and apprehensive attitudes about consultants. This apprehension can be eliminated when understanding of the consultant's job is obtained. Advising, teaching, evaluating, and acting as liaison agent are all her activities. She is employed in as many different ways by agencies and institutions. As a repository of specialized knowledge, she may be called on in time of emergency. The wise supervisor knows how to ask for help and point out specific problems to the consultant. The consultant must be informed of what is expected of her and of the opinions, pressures, and relationships which the supervisor has brought to bear on the problem(s), in order to do an effective job.

NUTRITION

Vol. 11, Spring 1957

* Protein in nutrition. H. Chick.—p. 7.

A historical review of diabetic dieting. D. M. Dunlop.—p. 13.

* The background of malnutrition. C. D. Williams.—p. 19.

* Dietetics in America—3. M. E. Furnivall and J. M. Vasey.—p. 28.

Protein Advances. It was not until the turn of the century that the proteins contained in different foods were recognized as possessing different nutritive values. Since then, there have been great advances in the chemistry of the proteins. These have concerned their nutritive value, the presence and amounts of the various amino acids, and the essential amino acids which cannot be synthesized in the animal body. Food composition tables now include the amino acid content of proteins of both animal and vegetable origin.

Malnutrition. In order to apply the present knowledge of nutrition, it is necessary first to identify the various types of malnutrition, since "malnutrition" is not a simple diagnosis. There are many conditions that form the background of malnutrition: (a) non-availability of food; (b) wrong selection of food; (c) wrong preparation, presentation, and timing of food; (d) contamination of food; (e) individual variations in nutritive needs; (f) psychology; and (g) other diseases. In the less advanced countries, the need for improvement of diets applies mostly to children—to malnutrition in the more severe forms. In the more advanced countries, it is being recognized that many of the diseases that threaten the lives of the middle-aged may be due to food. Dietitians have much to contribute to the solution of food problems that are now well defined.

Dietetics in the U.S. The fields a dietitian may enter in the U. S. are more numerous than in Great Britain, and they may indicate some of the future trends of the profession in Great Britain. The various aspects of the teaching of nutrition and diet therapy to nurses are explained. Another field that is discussed is that of public health, including the qualifications and different duties of the public health nutritionist.

PROCEEDINGS OF THE NUTRITION SOCIETY

Vol. 16, No. 1, 1957

* Changing concepts in the nutritional physiology of human pregnancy. I. Leitch.—p. 38.

* Technique and perspective in clinical and dietary studies of human pregnancy. A. M. Thomson.—p. 45.

Nutrient requirement of rats and mice. W. F. J. Cuthbertson.—p. 70.

The role of an adequate diet in the production of healthy guinea-pigs. J. S. Paterson.—p. 83.

Nutrition in Pregnancy. Pregnancy is not a pathological process as was previously thought by some physiologists and biochemists. The pregnant woman makes large adjustments of her own body which are compatible with a healthy life. At the present time there is no criteria of normality. A first pregnancy is more often a failure than the next two or three; after a certain age failures are more likely, whatever the number of children already born.

Surveying Nutrition in Pregnancy. The correlations between food intake during pregnancy and the outcome of pregnancy are difficult to demonstrate even by survey methods where the average nutritional level is reasonably high. Nevertheless, improvement in the diet of pregnant women was responsible

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for the dramatic reduction of fetal mortality in Britain during the recent war. It is felt that well fed girls have a much better chance of becoming healthy mothers with uncomplicated pregnancies and labor. The hypothesis that birth weight is influenced by nutrition is favored by the fact that average birth weights diminish as social status declines and there is low intake of protein and most other nutrients. Pregnant women who gain much weight have a relatively high incidence of pre-eclampsia; hence, the dietary regulation of weight is widespread. It is surprisingly difficult to establish nutritional inadequacy as a cause of lactational failure in times of popular artificial feeding. However, inadequate milk production and impaired maternal health while lactating are frequently recorded. In the absence of frank deficiency disease, survey methods are of little value in determining the effect of varying the levels of a food or nutrient. The "recommended allowances" are empirical and practical rather than physiologic standards. However, a carefully controlled feeding experiment is an undertaking even more difficult than a field survey.

PUBLIC HEALTH REPORTS

Vol. 72, March, 1957

* Methemoglobinemia from eating meat with high nitrite content. J. D. Orgeron, J. D. Martin, C. T. Caraway, R. M. Martine, and G. H. Hauser.—p. 189.
* APHA conference report, 1956—Nutrition.
  Sitosterol in corn oil, a cholesterol depressant.—p. 231.
  Sees future for antibiotics as food preservative.—p. 231.
  Puerto Rican health group improves Island's nutrition.—p. 232.
  Social science offers key to folkway food barriers.—p. 232.
  Vegetable mixes offer adequate basic diet.—p. 233.

Methemoglobinemia from Nitrite in Meat. Ten cases of methemoglobinemia occurred in the New Orleans area. Methemoglobinemia is a condition in which a part of the hemoglobin has been oxidized to methomoglobin with a consequent reduction in the oxygen-carrying power of the blood. Symptoms include nausea, vomiting, profuse sweating, and an intense cyanosis of the fingertips, nose, and ears. Early evidence pointed to the ingestion of large amounts of nitrite in wieners and bologna as the cause. Exactly how the excessive quantity of nitrite got into the meat products could not be determined. This outbreak demonstrates the need for effective meat inspection services in all meat packing plants. Meat plant personnel should be made aware of the dangers of careless handling of nitrates, nitrites, and other chemical additives.

Sitosterol as a Cholesterol Depressant. In this experiment fifty-two healthy young males were divided into five groups, one of which received beta-sitosterol as a supplement; two groups received alpha-tocopherol in differing amounts; one had a diet high in corn oil; and the fifth group had a diet high in butterfat. The group on the sitosterol and the one on the corn-oil diet showed a highly significant decrease in plasma cholesterol. The alpha-tocopherol, however, had no effect. A number of investigators have shown that beta-sitosterol brings about a cholesterol decrease in some hyper-cholesterolemic individuals, but is not effective with plasma cholesterol concentrations of less than 200 mg. per 100 ml. It has been shown that dietary cholesterol in amounts up to about 700 mg. per day had no effect on the concentration of plasma cholesterol.

Antibiotics as Food Preservatives. Certain of the broad spectrum antibiotics have shown great potential value in delaying spoilage of perishable fresh food, and in proper usage there appears to be no public health hazard. However, not all antibiotics act the same way nor do all foods spoil the same way. While the tetracyclines, particularly chlortetracycline, may be effective in preserving meat, penicillin destroys the normal spoilage flora. Streptomycin is of no value in preserving high-protein foods, yet it is quite effective for bacterial soft rot of certain fresh vegetables. All of these antibacterial agents are useless against fungal spoilage. Antibiotics do not sterilize food, but like refrigeration, they may inhibit the growth of bacteria already there. Antibiotics and refrigeration are complementary.

Puerto Rican Nutrition. Faulty food habits and low income are two of the main factors responsible for Puerto Rico's nutritional deficiencies. The typical diet is low in high quality protein, vitamin A, and calcium. A nutrition committee is attempting, through its educational programs and with the help and cooperation of governmental agencies, to improve food habits without changing the basic structure of the diet and to increase the per capita income.

Changing Cultural Food Habits. Collaboration between social scientists and health workers in nutritional programs is advocated. Food habits are among the oldest and most deeply entrenched aspects of many cultures and cannot be easily changed or, if changed, may produce unwelcome reactions. Social scientists can help in determining why certain practices exist and indicate helpful techniques in changing them. Nutritionists are cautioned against being "culture bound." Too often food patterns which differ from the nutritionists's familiar and customary experiences are labeled "bad." There is little evidence to indicate that all the current nutritional theory is applicable to all people irrespective of their way of life.

Vegetable Mixes for Basic Diet. Vegetable mixes may be the most economical solution to protein malnutrition in countries with an inadequate supply of meat. The deficient patterns of various foods can be corrected in whole or in part by supplementation with the essential nutrients provided by milk, eggs, fish meal, and meat.

THE ROYAL SOCIETY FOR THE PROMOTION OF HEALTH JOURNAL

Vol. 77, March, 1957

* Food poisoning in man, with special reference to meat and meat products. R. Lovell.—p. 85.

Meat Production and Food Poisoning in Man. There is an increasing tendency today to use antibiotics and other therapeutic agents including sex hormones in the feed of herds and flocks. As a result of this scientific feeding, the gut wall of animals is thinner than normal and the bacterial flora is altered. For example: small quantities of penicillin fed to pigs induces a rise in coliform bacteria and a fall in lactobacilli. The face of infectious diseases is also changing because of the select action of antibiotic therapy. There is thus a revolution in the relationship of livestock to their microbial flora which is being brought about by specific therapy, by prophylactic use of specific drugs, and by their inclusion in feed. This violent disturbance may be beneficial or detrimental; for the sake of progress, an increase and greater variety of microbial food poisoning may have to be included in the account.

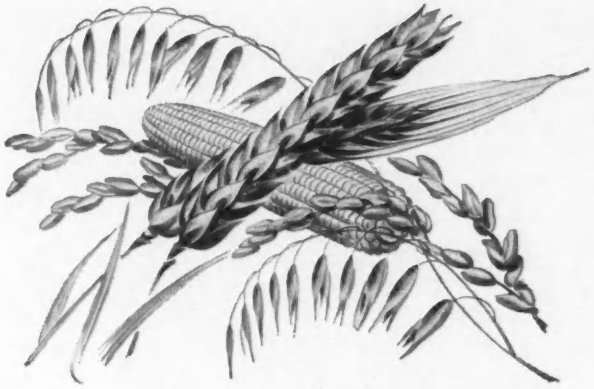
SCHOOL LUNCH JOURNAL

Vol. 11, March, 1957

* Here's how to select and use cutlery. E. M. Cushman.—p. 7.
* Regional director's column. M. S. Schade.—p. 9.

Selecting Cutlery. Here is a convenient review of all available sizes and types of cutlery most satisfactory for use by school lunch workers in quantity food production. A list of materials is given first, followed by specifications which should guide in purchasing high quality. Proper use of the cook's knife, the slicer, the boning knife, paring knives, kitchen forks, the bowl knife, and spatulas is described. Tips on sharpening and storing cutlery are also given.

The School Lunch and Nutrition Education. A committee interested in the food habits of the children in Cape Girardeau, Missouri, set out to survey the problem of nutritional education and found a need for improvement in youngsters' diets. In planning their educational program, they called on the community at large—parents, teachers, health and physical education groups; determined that the school cafeteria should serve as a laboratory in the teaching of good sanitary habits as well as unearthing many food fallacies; and, took a survey to determine children's eating habits. The survey yielded concrete information which became the basis of the nutritional program which is discussed at length. Teaching materials were made available for all elementary schools and the junior high school. Goals were set up to impress on the lower elementary grades that "food is good"; to show the middle grades that "food makes a difference"; and to prove to the upper grades "why food makes a difference." Letters were sent to parents urging cooperation and instruction at home. Teachers integrated nutritional instruction into art, geography, music, arithmetic, science, home economics, health, and so on. Experiments with animals were conducted in classes, newspaper publicity was widespread, and many social activities emphasising good eating habits were carried on, especially in the lower grades. The detailed implementa-



This Low-Fat Breakfast is Well Balanced

The importance of an adequate morning meal has gained wide recognition. That breakfast should be adequate not only in calories, but also in its content of essential nutrients, is advocated by medical as well as nutrition authorities even when recommending that the fat intake in the diet be lowered.

The foods commonly eaten at breakfast—fruit or fruit juice, cereal, milk, bread and butter—are also the foods comprising a basic breakfast pattern which has found wide endorsement by nutrition authorities. *As shown below this breakfast pattern provides well-balanced nourishment and is low in fat and low in cholesterol.*

BASIC CEREAL LOW-FAT AND LOW-CHOLESTEROL BREAKFAST PATTERN

Orange juice, fresh, ½ cup, Cereal, dry weight, 1 oz., with whole milk, ½ cup, and sugar, 1 tsp., Bread, white, 2 slices, with butter, 1 tsp., Milk, nonfat (skim), 1 cup, black coffee.

Nutritive Value of Basic Cereal Breakfast Pattern

Calories	502
Protein	20.5 gm.
Fat	11.6 gm.
Carbohydrate	80.7 gm.
Calcium	0.532 gm.
Iron	2.7 mg.
Vitamin A	600 I. U.
Thiamine	0.46 mg.
Riboflavin	0.80 mg.
Niacin	3.0 mg.
Ascorbic Acid	65.5 mg.
Cholesterol	32.9 mg.

Note: To further reduce fat and cholesterol use skim milk on cereal which reduces Fat Total to 7.0 gm. and Cholesterol Total to 16.8 mg. Preserves or honey as spread further reduces Fat and Cholesterol.

Bowes, A. deP., and Church, C. F.: Food Values of Portions Commonly Used. 8th ed. Philadelphia: A. deP. Bowes, 1956.
Cereal Institute, Inc.: The Nutritional Contribution of Breakfast Cereals. Chicago: Cereal Institute, Inc., 1956.
Hayes, O. B., and Rose, G. K.: Supplementary Food Composition Table. J. Am. Dietet. A. 33:26, 1957.

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tion of teaching techniques is indicated in the article which leaves the reader with no doubt as to the over-all effectiveness of the program. A report of the project was printed by the State Department of Education for distribution to other schools.

SCIENCE

Vol. 125, March 22, 1957

* Selection of body sites for fat measurement. S. M. Garn.—p. 550.

Measuring Body Fat. With increasing interest in the problem of obesity, workers are turning from such indirect measures as overweight and relative weight to direct measurement of body fat. However, when the superficial fat layers are measured by pinch calipers or by roentgenograms, the problem arises as to which sites to measure. Six regions of the body were X-rayed, and from these regions fat measurements were made at twelve sites. Three fat sites emerged as exhibiting the greatest degree of communality and the highest correlations with weight. These were the iliac spine, mid-trochanteric, and lower thoracic. While fat over the pelvis here appears to be the best single predictor of fat in general, the lower thoracic site may prove to be of considerable practical use on chest plates, thus extending the value of mass radiography to the assessment of obesity.

SOUTHERN MEDICAL JOURNAL

Vol. 50, February, 1957

* Effect of vitamin B complex and S-factor on acne rosacea. W. L. Poole.—p. 207.

The influence of nutritional processes on aging. T. D. Spies.—p. 216.

Vol. 50, March, 1957

* A new approach to infant feeding. The use of solid foods and three meals a day from birth. Part I. W. W. Sackett, Jr.—p. 340.
* Early feeding program. Part II. J. E. Crews. —p. 343.

B-Complex and S-Factor in Acne. Acne rosacea has been defined as an angioneurosis of the facial skin with seborrhea. It is a chronic disorder of the "flush area" of the face characterized by congestion, seborrhea, telangiectasia, and acneform lesions. The causes may be divided into four factors: (a) Lack of vitamins—riboflavin, especially in eye lesions; niacin; and pyridoxine. (b) Local infection, due to cocci and *Demodex follicularum*; antibiotics are of help here. (c) Gastro-intestinal disturbances as the result of overuse of caffeine, hot beverages, condiments, carbohydrates, proteins, and alcohol. Proteins increase the permeability of blood vessels; a fruit-vegetable diet decreases it. A history of high-carbohydrate intake is common in rosacea patients. Hydrochloric acid prevents pustulation by creating an acidophilic flora and is necessary for digestive enzymes to act and for absorption of vitamins. (d) Neurogenic factors, such as chronic worry, overwork, late hours, insomnia, introspective personality, marked repressions, depressions, and so on, which lead to gastric hypoacidity. An effective method of treatment should take account of these four factors. One hundred fifty-eight patients were treated for periods ranging from several weeks to ten years. There were twice as many women as men. Most were thirty to fifty years old. The majority had fair skin, light complexion, flushed easily, and had a slightly oily skin. Most were overweight. Where lesions were frankly pustular, local sulfonamides and antibiotics were used. The congestions improved with S-factor and B-complex. Relapses were lessened by sensible living, diet, release of tension, and occasional resumption of vitamins. The diet must be worked out for each individual patient. Half the patients having two or more injections of S-factor and antibiotics were seen one to five years later; of these, 40 per cent remained free, 20 per cent had minor difficulties, necessitating self-treatment at home; and 40 per cent had minor flare-ups.

Solid Foods in Infant Feeding. Solid foods have been fed to the very young by this investigator since 1949. The advantages of this plan include: (a) Fewer feeding problems as the baby grows. (b) Easy acceptance of food from a spoon. (c) Optional use of vitamins and mineral supplements (more often than not, unnecessary). (d) Happier and more contented parents and babies. (e) Fewer cases of diarrhea. (f) Schedule allowing for a better relationship between other children in the family and the baby.

Early Feeding Program. Early feeding of infants is begun the second day of life with cereal, ripe banana, and formula at 6 a.m. At 9 a.m., up to 2 oz. of half-strength orange juice is given. At noon, one or two puréed vegetables and formula—as much as the baby desires—is provided. At 3 p.m., orange juice as at 9 a.m., is fed. At 6 p.m., one or two fruits, cereal, and as much formula as the baby desires is offered. Baby will sleep throughout the night. It is important to keep this schedule exactly. At two months, strained meat products in combination with vegetables and cereals are added. At eight to ten weeks, custard and puddings are added at the evening meal. At three months, liquids from a cup are encouraged. There have been no incidents of aspiration of food or other gastro-intestinal upsets. The growth and development of these babies has been average or above.

TEXAS STATE JOURNAL OF MEDICINE

Vol. 53, March, 1957

* Hepatic coma; recognition and therapy. W. T. Arnold and S. J. Zimmerman.—p. 152.

Hepatic Coma. The term "hepatic coma" refers to a patient with diseases of the liver or portal circulation who manifests varying degrees of encephalopathy.The clinical picture of hepatic coma and the relationship to the blood ammonia levels has been defined. The specific syndrome of ammonia intoxication related to the ingestion of nitrogenous substances in the presence of a patient with varying types of disorders of the liver or portal circulation, has also been observed. Experience has shown that monosodium glutamate is of value in treating the acute exogenous type of encephalopathy, especially, in bringing the patient out of impending coma. In two cases, it was the prevailing medical opinion that the superimposed infection and the failing liver caused the coma. The deduction was apparently correct as evidence by the response of the patients to intravenous monosodium glutamate.

ADULT LEADERSHIP

Vol. 5, April, 1957

* The method of adult education. H. Schueler. —p. 306.

Method of Adult Education. The adult student, it must be recognized, is not school-centered; the school is for him life-centered. His goal is not preparation for a future life of which he is not yet a part, but the enrichment and enlargement of the scope and meaning of the life that he is now living. As a result, the teaching of adults should embrace techniques foreign to the classroom of the youthful student. Adult instructors should get to know their students and their individual backgrounds. Instructors should realize the importance of active student involvement and invite student help in planning the activities of the course in kind, scope, and sequence. The teacher of the successful adult class should aim for a productive interaction of individuals through the medium of shared learnings and the meeting of minds. The validity of this type of classwork and its evaluation in terms of success or failure should not be determined by regular institutional standards. Instead, the principle of self-development should be adopted. It will then follow that standards of achievement can have as much variation as is appropriate to the needs of the student. It will mean that each student will have a hand in grading himself and his own work. A good adult group will therefore use the evaluation built into its learning activities. With sure guidance, the teacher will help the class to plan, carry out, and evaluate its own activities. Adult education should be its own reward, and the student's consciousness of growth, its measure.

AMERICAN RESTAURANT MAGAZINE

Vol. 41, April, 1957

* What people like and don't like about restaurant menus. L. Weaver.—p. 38.
* Problems and solutions.—p. 60.
* Ready mixes = tempting baked products at minimum cost.—p. 62.
* Pies . . . pointers on crusts, fillings, oven temperatures.—p. 64.

Restaurant Menus. A recent survey finds that general dissatisfaction with menu offerings springs from several causes. The smallest number of complaints came from diners who spent more than $2 per meal and those who only occasionally dined out. The remainder, some 61 per cent of restaurant patrons, thought there was plenty of room for

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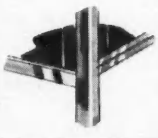

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Smooth, strong, satin-finish stainless steel shelves and uprights... easy-to-clean... lasts for years!

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Famous for smooth, free-wheeling handling! Caster wheels have ball-bearing swivel . . . bolt and nut axle... permanently oiled bearing.

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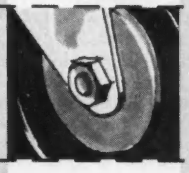
Heavy angle caster framework is rugged foundation for LAKESIDE Carts and trucks . . . increases strength and capacity.



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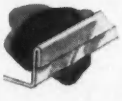
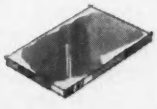
Strings, hair, dirt can't accumulate around axle... wheels roll smoothly, effortlessly even after years of constant use.



EDGES DOUBLE-FOLDED
All shelf edges are double-folded for extra strength and smoothness . . . another important "extra" in LAKESIDE quality.

RUBBER BUMPERS
Wide range of bumper equipment available on most LAKESIDE models: handle bumpers, corner leg bumpers, strip bumpers, channel frame bumpers.

ELECTRONICALLY WELDED
Finest, most modern welding techniques! Shelves are electronically welded to frame to insure long, strenuous use.



NOISEPROOF SHELVES
Sound deadener applied to underside of every LAKESIDE shelf minimizes noise caused by vibration and use... assures quiet operation.

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menu improvement. Complaints fell into four main categories: lack of variety; menu monotony; protests about prices in comparison to portion sizes; and menu confusion. Nine per cent of the 61 per cent protesting patrons found that menus were confusing to read and think it is difficult to find what they want; 17 per cent complained of à la carte pricing and portion sizes—some think portions too large but others think table d'hote servings too small; 28 per cent wanted more variety of fresh vegetables and salads, more day-to-day selection. The rest (comprising 7 per cent) had miscellaneous complaints.

Baking Problems and Solutions. For those times when the finished product may fail and fall short of the standard, this list of typical failures, possible causes, and remedies is a boon. For cakes, pies, cookies, and doughnuts come suggestions for correction of everything from tenderness to toughness, dryness to heaviness. This is a handy article to cut out and place in a prominent place for the cook's convenience.

Tempting Baked Products. To offset ever-rising labor costs, many restaurant operators find labor-saving equipment and the greater use of easy-to-prepare food items the only way to greater volume per manhour. One of the greatest labor-saving products has been pre-mixes. On every item made with a top-quality pre-mix, there is a good margin between ingredient cost and selling price. Complete quality and portion control are also assured, and the problem of estimating costs and yield is eliminated. Originality of a restaurant chef must be used to make the most of the many pre-mixes and their possibilities. Everything from doughnuts to Boston cream pies, sweet rolls, coffee cake, cobblers, and home-made biscuits can be used to build volume business in "take-home" foods and "home baked" dinner accessories.

Pies. Nine delicious recipes and tips on pie mixes accompany this short baking guide. Proportions of ingredients in regular pie dough are given and instructions on mixing methods which vary depending on the materials used, the quantity to be mixed at one time, and the preference of the baker for flaky, mealy, or rolled-in pie dough. Tips on handling the dough and ways to avoid crust shrinkage, soakage, and/or sticking are also given. Oven temperatures for two-crust, cooked fruit, custard, and uncooked fruit pies are listed along with a ready-mixed recipe which makes 13 lb. of pie dough.

FOOD SERVICE MAGAZINE

Vol. 19, April, 1957

* How to modernize food disposal. G. Patrick.—p. 32.
* How soup bases build food flavor. L. McCormick.—p. 44.
* The electric silver washer and drier. E. Hawthorne.—p. 58.

Modernized Food Disposal. Today, modern disposal units lick the sanitation problem so effectively that fifteen cities now require their installation in new food operations. Disposers process 200 to 2000 lb. waste per hour, and eliminate garbage cans and silverware loss and pay for themselves in four months. Is it any wonder they are becoming increasingly popular? There are two modern disposal systems, either one of which can be adapted to any particular kitchen. The central system is a single unit to which food waste must be brought. The point-of-origin system places disposers strategically at each location where waste accumulates. A blueprint for tomorrow's business, the slogan "modernize to profitize" certainly embraces the disposal system in its meaning.

Soup Bases. Soup bases can cut hours from processing time yet supply in a few seconds a rich basic flavoring agent for soups, sauces, vegetables, and a host of popular low-cost entrées. The cost of a soup base spread over twenty-five to fifty servings is negligible. Recipes using soup bases in Swiss steak, Creole sauce, and shrimp chow mein are given to demonstrate the versatility of this modern product. Soup bases are extenders and seasoning agents that can yield greater eye-appeal and lower portion cost to your dishes.

Silver Washer. An electric silver washer and drier will quickly eliminate the embarrassment of unsightly flatware because, in minutes, it can remove all food stains, grease, and film. Completely automatic, the unit washes, rinses, sterilizes, and dries flatware (silver) and stainless ware. A special piece of equipment, it does not replace the burnisher, but does, eliminate about 75 per cent of the need for one.

HOSPITAL TOPICS

Vol. 35, April, 1957

* How one hospital solved its food complaints. S. Price.—p. 29.

Solving a Hospital Food Problem. Turning complaints into compliments is quite an accomplishment, especially when the press has in no certain terms condemned your food as virtually unfit for human consumption. The author, an administrator and medical director in Hawaii, tells how the problems of poor taste, monotony of menu, and many other specific complaints concerning everything from toast to coffee were overcome. Gaining a reputation as a gourmet is no easy job, but the author managed to win a few laurels for himself as a result of the improved foods program. How was it done? Coffee pots were replaced; toasters were installed in private rooms; and seasoning is added to foods before and during cooking. Separate cooking of special low-sodium and restricted diets became standard practice; uninteresting or unpopular items were cooked and served differently as the cooks became sufficiently interested in varying recipes.

HOSPITALS

Vol. 31; March 16, 1957

* Heat retaining pellets keep food hot. K. L. Vatz.—p. 69.

Vol. 31, April 1, 1957

* Dietary service caters to individual food tastes. A. E. Foldi.—p. 82.

Pellets Keep Food Hot. At Louis A. Weiss Memorial Hospital, Chicago, studies of various types of hot food service equipment were made in an effort to combat the cold-food problem of a centralized tray service. It was finally decided that the food system using electrically-heated pellets and insulated "hot plates" best met the needs of this hospital. The system employs the following equipment: (a) heavy-gauge stainless steel bottom shells with built-in insulators, called "hot plates": (b) heavy-gauge stainless steel hot plate covers; (c) pellets made of an aluminum base alloy capable of retaining both heat and cold; and (d) stainless steel electric pellet oven, thermostatically controlled to 550°F., which heats, stores, and dispenses pellets. The pellets are heated to 450°F. and dispensed into the "hot plates" by pulling a lever on the front of the oven. Ovens are available in 120-, 210-, and 300-pellet sizes to fit individual needs. A heated cabinet below the pellet oven provides storage space for the "hot plates," covers, and china, and a revolving shelf facilitates removal of "hot plates." Dishes are stored in heated dispensers. The "hot plates" are custom made to fit the china dinner plates already in use. Food service begins at the starter's station, where the heated "hot plate" is removed from the revolving shelf, a pellet is dispensed into the hot plate, and it is placed on a tray. The vegetable server places the china plate on the "hot plate" and the server at the soup station places a heated cover on it. The tray is checked by a dietitian and then placed on an unheated tray conveyor for transport to the patient. Most food will be kept hot for 1 hr. with this system; poached eggs, 30 min. Salads and cold plates may be kept cold by placing pellets in a freezer for several hours before serving. Surveys indicate 98 per cent patient satisfaction with this type of food service.

Catering to Older People's Tastes. Service at Chicago's Drexel Home for older people is based on the principle that the dignity of the individual is the most valuable personal possession. Residents are free to come and go, to visit friends and relatives, and to participate in activities as they wish. There are, however, certain regulations which are unavoidable. For instance, there are definitely set meal hours. Older people can, and do, learn to accept new dishes. It may take them a little longer, but with understanding and the correct approach they will "come aboard." Most of the residents have good appetites. Those who are insecure are often difficult to satisfy, and frequently feel they do not get enough to eat. Some overeat and others do not eat enough. The latter group requires more attention and when given that attention, they will eat better. Of the 230 residents, approximately 150 are served in the dining room; 50 in the dining rooms in the infirmary unit; and 25 to 30 receive tray service in their rooms. Food is served

Meat...

and Protection Against Hypochromic Anemia

Hypochromic anemia, the most common nutritional deficiency in children in the United States, occurs most frequently in the second six months after birth.[1] A major cause of anemia in early infancy may arise from insufficient transfer of iron from the mother to the fetus,[2] since anemia is not uncommon in pregnant women.

A first step, then, toward prevention of hypochromic anemia in the infant is the provision of a prenatal diet rich in available iron and in high quality protein. A second and most important step is the addition of foods high in utilizable iron (egg yolk, sieved meat and vegetables) to the infant's daily diet as early as possible (usually 3 months after birth).[1]

Meat contributes valuable amounts of anabolically effective protein, B vitamins, readily available iron, and other minerals to the nutrition of the pregnant and lactating woman. The feeding of sieved meat to infants after the third month provides well-utilized iron and aids in the prevention of hypochromic anemia.

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1. Jackson, P. L.: Iron Deficiency Anemia in Infants, Editorial, J.A.M.A. *160*:976 (Mar. 17) 1956.
2. Martin, E. A.: Roberts' Nutrition Work with Children, Chicago, The University of Chicago Press, 1954, p. 211.

The nutritional statements made in this advertisement have been reviewed by the Council on Foods and Nutrition of the American Medical Association and found consistent with current authoritative medical opinion.

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from electrically heated food carts directly in front of each table, thus providing the resident the opportunity to indicate the quantity of food desired and to receive substitutes which are provided. A selective menu was tested and found unsatisfactory as the "neighbor's food always looked much better," when it was served. This played into the personality problems and permitted residents to express their antagonisms in terms of food service. Patients, however, list their preferences by a questionnaire that they fill out each year. This allows the dietitian to learn their preferences and to omit foods that the residents do not like. In planning menus the following considerations are made: (a) Energy requirements of older people are lower. (b) Fat intake is reduced to avoid obesity. (c) There is moderate sodium restriction, particularly for persons with hypertension and cardiac failure. (d) Protein requirements are approximately the same as those of normal adults. It seems best to serve the main meal at noon. An important consideration in preparing food for older persons is its consistency. Special care and emphasis must be placed on the tenderness of the meat because of difficulty of chewing. Salads are well accepted when they are shredded and ground fine.

THE HOTEL MONTHLY

Vol. 65, April, 1957

* If you can't beat the weight-watchers, join 'em! —p. 59.

Join the Calorie-Counters. Faced with the increasing spread of diet-consciousness and dessert-cutting patrons, the hotel man makes a decision. If he is wise he chooses to put appetizing low-calorie desserts on his menu. They can be just as good-looking as high-calorie desserts and have the plus value of easy merchandising. The non-caloric sweetener may be used in all food preparation processes, but there is danger in using such sweeteners in untested recipes. A non-caloric sweetener does not, of course, replace the texture nor the preservative qualities afforded by sugar. Merchandising possibilities include menu listing, tip-ons, tent cards, presentation of two identical desserts with identifying cards announcing "the remarkable savings of calories" in the non-caloric sweetened dessert.

INPLANT FOOD MANAGEMENT

Vol. 4, March, 1957

* Planning the inplant cafeteria.—p. 22.

Cafeteria Planning. The case for both company operation and contract operation of the inplant cafeteria is stated. Advantages of company operation include: close integration with company policies and programs by utilizing other service departments of the company; management determination of the financial direction of the service (should it be subsidized, operated as a "break even" enterprise, or operated on a profit basis?); direct promotional possibilities (cafeteria service can be used as a good employee relations tool); and, the availability of cafeteria manager's associations to give advice, assistance, and up-to-date procedure information. Advantages of the contract operation include: relief of company personnel from activity unrelated to its main business; efficient management by specialists; availability of relief personnel at all times and adequate staffing; diminished employee criticism and fewer employee demands; more economical purchasing; specialized personnel supervision; and, savings on centralized office accounting.

INSTITUTIONAL FEEDING AND HOUSING

Vol. 8, April, 1957

* Organizing equipment for a quality kitchen. J. Ghene.—p. 8.
* How to buy lettuce. R. A. Seelig.—p. 32.
* 55 ways to use coffee flavor.—p. 36.
* Purchasing should be controlled by top management. C. Blackburne.—p. 40.
* Keeping stainless steel clean.—p. 68.

Equipment for a Quality Kitchen. The food preparation areas of a New York City executive's club are grouped in compact units flowing into each other. Work flow patterns are easy to supervise, and overlap of duties is eliminated. Work function in every case is clearly delineated. The manager of the club points out that selection of equipment is the most important part of an organization that performs well. Selection of the best for the proper function is his rule, and he also follows through with this philosophy in selecting his personnel. The best equipment and man power may seem to cost more, but it costs less in the long run.

Buying Lettuce. The five types of lettuce—crisphead, butterhead, romaine, leaf, and stem—are all available year round. In buying them, make sure of complete freshness, crispness and bright, tender appearance. In some seasons where "tip-burns" occur, lettuce may be safely purchased, on the condition that the burns do not extend beyond the two or three outer leaves. Heads should be free of decay and seed stems (which can be detected by wide spaces between the outer leaves at their base and a knoblike swelling protruding beyond the normal contour of the head). Discoloration of the butt end does not indicate old age or poor quality. Lettuce keeps best under moist refrigeration. The most favorable temperature is 32°F.

Purchasing Procedure. The advantages of top management control of all food purchasing make five main points quite obvious. First, individual managers may send in the local prices on market commodities and comparative pricing in the central office can be instituted. When suppliers have been selected, specifications and controls for all produce and meat may be agreed upon. Following from this second advantage is the third: specifications insure uniformity of sizes and weights thus making it possible to produce uniformly good and uniformly profitable meals served in all volume units. The fourth and fifth advantages include: prestige and economical freight rates. The company itself will attract the prestige always involved in large spending, and the vendor will be careful to deliver foods up to standard. The central purchasing agent can often save more money than the local unit manager on freight because he has information on various types of transport in different parts of the country.

New Uses for Coffee Flavor. The availability of soluble coffee adds many possibilities to the list of coffee recipes. It can delightfully flavor meat and cheese dishes, fruit desserts, baked goods, and fillings and toppings. This is because coffee combines in a distinguished way with many other flavors. Soluble coffee can be used like an herb or spice along with wine in meats. The list of possible uses comes to fifty-five, and the possibility of more is unlimited. Three coffee recipes accompany the article.

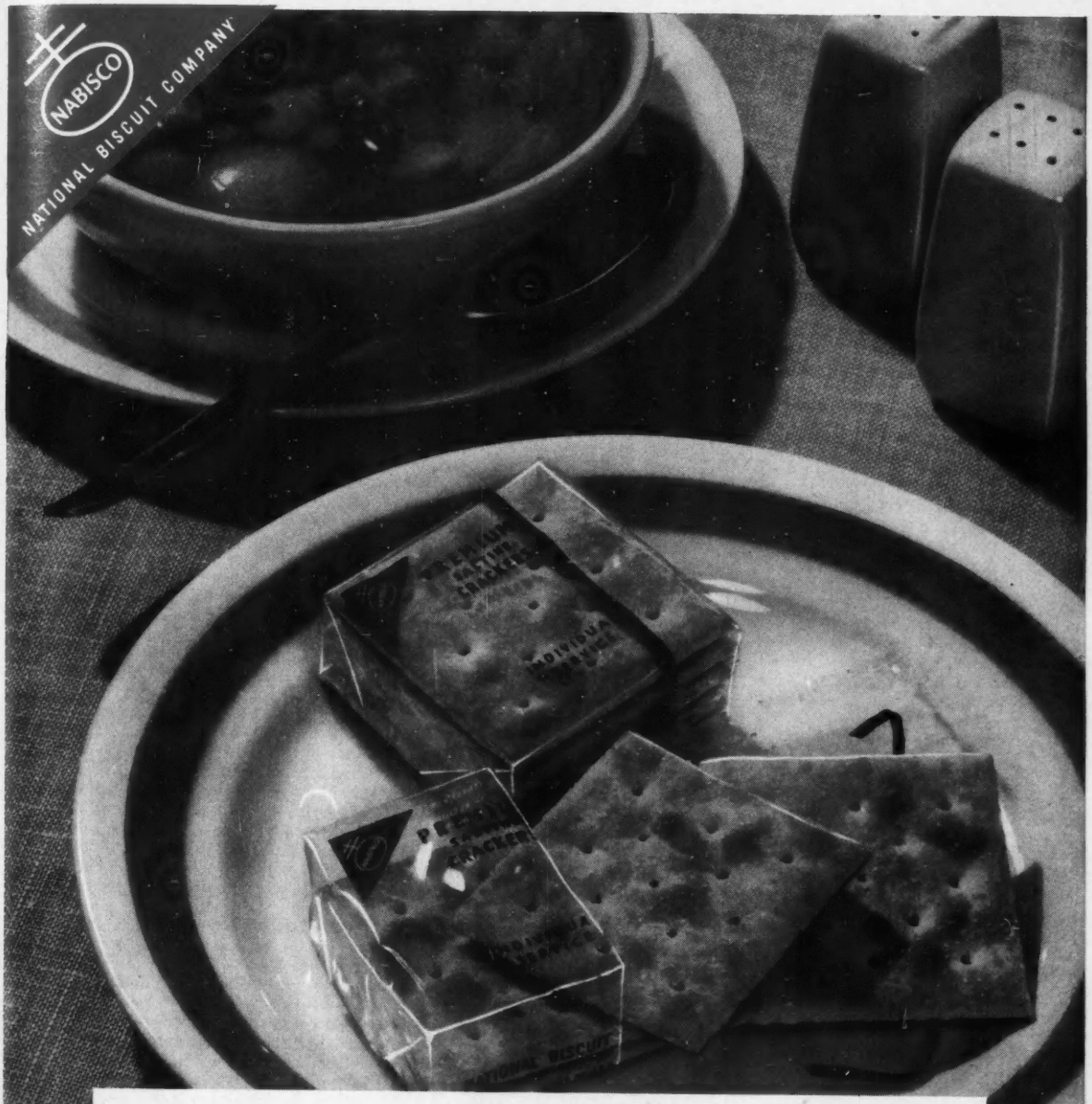
Cleaning Stainless Steel. By using the proper cleaner, following the correct cleaning procedure, and cleaning every piece of equipment after each use, the need for repairs on stainless steel equipment can be cut in half. Detergents are the best cleaning agents; organic dirt, such as food substances or grease, should be dealt with by an alkaline agent. Routine surfaces not used for food preparation may be cleaned with ammonia and water. Finger prints wipe off with a wax or oil formula. Only mild abrasives and specially designed brushes should be used on spots or stains. Heat tinting (the slight oxidation and staining of steel exposed in heated areas) can be removed by vigorous scouring with stainless steel wool and an abrasive paste cleaner. A steam gun can effectively take care of inaccessible spots, and a mild organic acid detergent will remove inorganic dirt.

INSTITUTIONS

Vol. 40, April, 1957

* The human body—how to increase its efficiency. L. H. Kotschevar.—p. 14.
* Making refrigeration work for you. C. K. Litman.—p. 24.
* Elements of good supervision. S. M. Hartt.—p. 41.
* Practical approach to employee training.—p. 44.
* Key to control—rules for buying. G. T. Nuckols.—p. 46.
* Specialties start with poultry purchasing.—p. 124.
* Menus made for child-appeal.—p. 164.

Increasing Human Efficiency. For the easiest, most efficient way to handle and move heavy loads, it is wise to use headwork rather than footwork to save time, energy, and tempers. Photographs, diagrams, and explicit description explain how human energy can be saved and accidents reduced by following a few simple principles. Body wear and tear can be saved in lifting and lowering loads if the leg muscles, not the back muscles, are used. Fatigue of all kinds can be lessened if the body is kept aligned and heights of working surfaces are such that body alignment is not thrown off. In lifting, the body should be used as a lever, with the heavy object held nearest the center of gravity (the body). Two or more people should lift



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very heavy objects. Severe strain may be imposed on workers if heavy objects are stacked more than 7 ft. high. When it is simpler, pull or push heavy loads rather than lift them. Whenever possible, use momentum and rhythmic motions to do such things as rocking barrels, swinging sacks, or setting up chairs.

Refrigeration. In a discussion of materials used in the construction of modern refrigeration equipment, the author recommends that a buyer learn what the best materials for his application are, even if it means getting engineering assistance, and that the buyer insist on equipment that uses those materials. Equipment should be purchased from a manufacturer who is known for his integrity and quality of manufacture. Among insulations which include corkboard, mineral wool, glass fiber, vegetable fiber, foamed glass, and foamed plastic, foamed glass is pointed out for its ability to trap air in small pockets which provide additional insulation value. Batts made of these fibers can be installed readily to fill voids and do not settle. The proper installation of insulation is very important, and in commercial refrigeration units, should not be less than 3 in. thick. The exterior of the refrigeration should be sealed as tightly as possible against moisture, but the interior lining should not be completely sealed in order to allow passage of any moisture trapped in the insulation to the colder interior and the refrigeration evaporator. Materials which retain insulation include: stainless steel, porcelain enameled iron, painted steel, aluminum, and galvanized iron. Stainless steel is by far the most expensive of these materials, but as far as superiority goes, it is recommended that any potential user should obtain the actual material specifications from the manufacturers and then submit them to a professional engineer for an opinion.

Good Supervision. The selection and training of non-supervisory personnel in the student union is very important for several reasons. Some schools are state institutions and therefore fall under civil service regulations. These facts have a tendency to attract stable, long-term employees and relieves the food manager of the responsibility of setting wages. He must, however, cooperate in establishing job descriptions and hours according to civil service procedure. And he must face the challenging problem of re-educating his older employees in up-to-date techniques.

Employee Training. The ideal way to break-in new employees quickly and as painlessly as possible is discussed. It is recommended that the new restaurant worker be oriented by some worker on his own level. Before work begins, time should be taken for the explanation of each single detail concerned with the station. The new worker should be coached in what to say to a customer, with enough time allotted before work for a short personal rehearsal of this first sales contact with the patron. A supervisor or old employee should quietly step in from time to time during the first meal and take over the station, demonstrating the required selling and serving techniques. The most complete instructions possible should be given to reduce procedural errors to the barest minimum; employees should not have to make mistakes caused by ignorance. Being switched to a different station or being requested to take a day off may result in a growing disinterest in the new job before the employee has become adjusted to it. Therefore, lay-offs and transfers should be avoided as much as possible with new workers.

Buying Rules. The definite and set patterns governing good fundamentals of purchasing apply to an owner, a steward, a manager, or a chef in equal measure. With experience, the food service operator will realize that quality buying is far cheaper in the over-all picture because it results in far less waste and insures a more satisfied diner. To help in learning "quality," the food buyer should gain know-how by actually working with food. He should read trade magazines on new trends in the food world and develop his own techniques and buying plan. In determining quality, the buyer has available to him innumerable sources of information. Foremost among them is the salesman. The purveyor and the purchaser can work together if they know the requirements of whatever is required, whether it be bananas, potatoes, cuts of meat, or grades of canned goods. Quality and economy based on need is the object of both salesman and purchaser.

Poultry Purchasing. Due to the efficiency of mass production, more poultry (chicken and turkeys) is available today than ever before. In the past fifteen years, broiler production alone has risen from relative insignificance to a total of over one billion birds in 1955. Fifty-nine per cent of all chicken eaten in 1955 in the U. S. was commercial broilers. Specialized broiler flocks have literally put the farm-type fryer or broiler to flight as two-thirds of the chickens eaten today have never seen a barnyard or been out of the enclosure in which they were raised. Selection and breeding have introduced a superior appearance to the dressed broiler. The results of this special breeding are discussed in this article, with the end in mind of providing information on selection and purchasing of birds. Classes of poultry and information on packaging are stated. Portion yields and nutrient composition of cooked turkey meats in relation to other cooked boneless cuts of meat are also given, in addition to recipes for stuffing poultry and making poultry gravy.

Menus with Child-Appeal. A discussion of menu planning for children in school and at camp includes sample menus for one week, ten meatless menus, and suggestions for dinner meats for three weeks. Techniques for creating appeal and approaching the child with food he does not like include clever ways of preparing raw fruits and vegetables, instruction in nutritional values, and sampling of foods previously rejected. It is recommended that casseroles and main dishes be kept very simple to retain child-appeal. Ice cream and gelatin desserts are recommended as favorites with children.

THE MODERN HOSPITAL

Vol. 88, April, 1957

* Interns' coffee bar is a worthy cause. A. H. Scheidt.—p. 91.
* Coffee breaks the monotony. Sister M. Clarice. —p. 92.
* Food service must serve two purposes. M. G. Carey.—p. 116.
* The dietitian has a selling job to do. M. C. Kelly. —p. 120.

Interns' Coffee. A hospital board recently turned over the earnings of cigarette and soft-drink vending concessions to the women's auxiliary, so that interns could be provided with privacy and inexpensive coffee. The hospital dietary department, in cooperation with the auxiliary, provided equipment and dishwashing thus leaving the staffing and purchasing for the coffee bar to the auxiliary. During the two morning hours it is open, 85 per cent of the attending and house staff visit the house staff dining room for a relaxed coffee-break.

Mothers' Coffee. The mid-morning coffee hour in the postpartum section of St. Alexius Hospital, Bismark, North Dakota, was planned and successfully initiated by the hospital administrator for several reasons. Previously, mothers tended to keep their breakfast coffee pots in their rooms and congregate together later in the morning to enjoy what should have been breakfast coffee. This impulse to socialize was considered to be beneficial to patients who otherwise might tend to stay in bed longer, but certainly proved inconvenient to the kitchen staff who found it difficult and annoying to round up coffee pots later in the day. The coffee hour was thus created, solving this problem and promoting an active family spirit in the section.

Two Purposes of Food Service. Food service must serve two purposes: the first is meeting the needs of the patients; the second, to give the hospital full value for every dollar appropriated in the food budget. Suggestions that help in accomplishing both include: make dietary consultation part of the acclimation program of the patient; provide selective menus and attractively and tastefully prepared food with proper service. This approach is effective in helping to keep the patient on a psychologic even keel, if carefully selected food servers, non-institutional silverware, dishes, carafes, and trays are used to breakdown the cold and impersonal atmosphere of an institution. Where modified diets are concerned, it must be the dietitian's job to make the patient see his food in an appealing light and to educate him to the advantages and need for continuing his new dietary habits at home. Where the budget is concerned, stress must be laid on acquiring the proper, specialized persons to administer the food program. This will result automatically in a more efficient program and better food. Modern equipment is an absolute necessity, and without it, a

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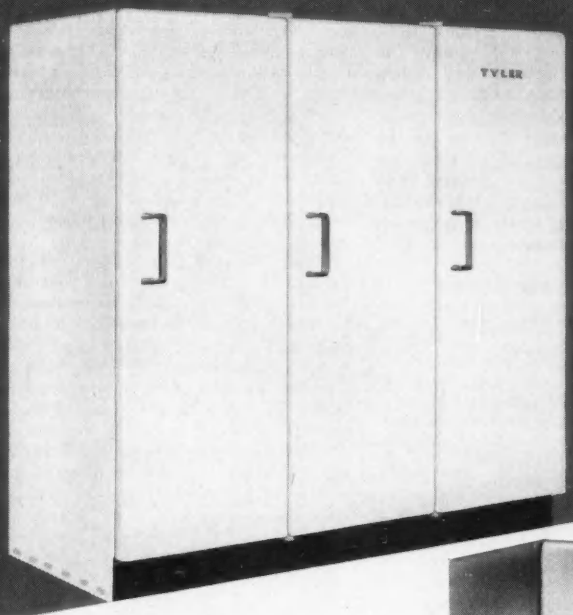

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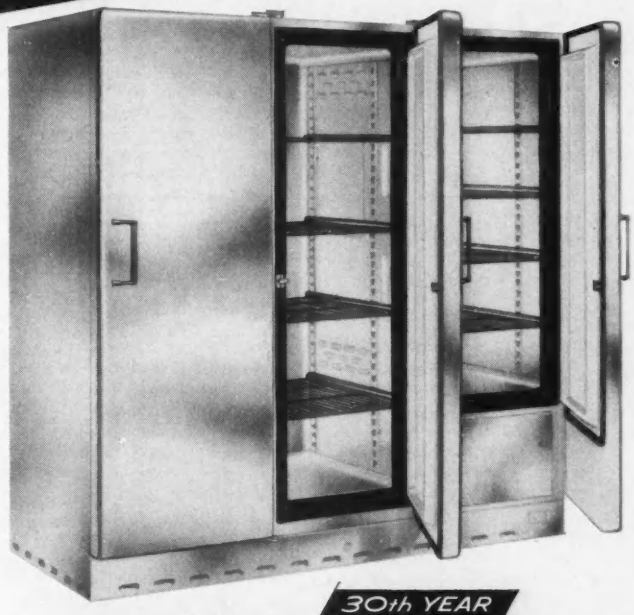

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ADDRESS_____

hospital hardly dares hope for improvement in service or economy in the budget.

Selling Job. The dietitian must not only maintain high professional standards in the hospital's food service, she must let the public know that standards are high. She must consider the whole management operation in line with approved business practice because today, the modern food service is best and can only be profitable when operated with the use of the most up-to-date business techniques. Because the dietitian often works with the hospital's business manager, it again becomes apparent that out-moded methods can no longer be tolerated. The public reaction to the regularly rotated menu, a menu which might be used for the staff dining room or the employee cafeteria, is generally not good. Such a negative reaction should serve to stimulate the dietitian to satisfy tastes with an occasional surprise item, wider choices, and inclusion of seasonal dishes in meals. The dietitian's responsibility increases when the hospital institutes the employee cafeteria as a service providing fringe benefits for workers and promotional possibilities for the management. For this reason, and because her job is continually expanding, the dietitian must promote better nutrition through quality food, a modern business outlook, and a public-orientated professional spirit in her department.

PERSONNEL JOURNAL

Vol. 35, March, 1957

* Practical group psychotherapy reduces supervisors' anxiety. G. A. Peters and J. G. Phelan.—p. 376.

Vol. 35, April, 1957

* The "behind-the-back" way in training conference leaders. B. J. Speroff.—p. 411.

Group Psychotherapy in Industry. A relatively inexpensive and time-saving manner of improving the character of relationships among workers is discussed. To reduce supervisors' anxiety and motivate workers so that they will be eager to perform at their potential capacities, groups of men are organized and skillfully guided by a leader (psychologist, physician, or social worker) into *intensive industrial role playing*. Workers assume the roles of their fellows in prescribed situations in order to gain understanding and insight into the feelings of other personalities. Although only a limited amount of insight can be expected from such a short-term, intensive, and specific method, lack of coverage and depth is made up in efficiency of application and low cost. The method at all times aims for constructive changes in attitudes.

Training Conference Leaders. In a growing number of companies, conference leadership has become a respected, full-time professional job. Considerable attention is devoted to the selection and development of conference leaders because they serve as communication links between various management echelons. An important part of the training of such leaders is the critique—the objective analysis and evaluation of the main elements of a meeting. Among other things, these elements include the skill and judgment demonstrated by the leader. Leaders are judged by skilled observers who assess the entire conference with the use of a special rating form and afterward go over the evaluation point by point with the leader. The recent use of "behind-the-back" criticism and comment in group psychologic sessions has also proved useful in training conference leaders. In a mock conference, where a leader is given a problem to handle with his group, the technique has worked very well. When his time limit is up, the leader is turned away from the conference table and with his back to the table listens to the comments of his colleagues on his conduct. The results of this training have shown up in more objective self-evaluations and improved skills in personal relationships and conduct.

RESTAURANT MANAGEMENT

Vol. 80, April, 1957

* Food, checks and cash—a "fool proof" system. L. Mackey.—p. 39.
* Taking advantage of preportioned foods. A. Easton.—p. 48.
* Workman's compensation—who's covered when? A. W. Gray.—p. 51.
* "How clean is clean?" W. F. Snyder.—p. 52.

Fool Proof System. The control of outgoing food and incoming cash is a difficult problem. To have a tight system, all cash, guest checks, and every item of food must be accounted for. A Kentucky restaurant owner finds he gets excellent results using the following set-up: (a) The waiter time-stamps the guest check and presents it for food. (b) The order is filled and time-stamped. (c) The guest check is itemized on the cash register, then placed in an "out" rack. (d) The waiter picks up the order and time-stamps the check. (e) The waiter pays for the check at his convenience. All the waiter's checks are numbered consecutively and turned in, in order, at the end of the day. Each waiter has a separate box where his daily checks are kept. The cash register has separate totals for food, bar, "checks paid," "paid out," and a total for each cash drawer. The "checks paid" total must agree exactly with the sum of the food and bar totals at the end of the day. "Checks paid" minus "paid-out" must equal cash taken in for the day.

Advantage of Preportioned Foods. The best way to achieve precise cost control is through the use of preportioned cuts of meat and poultry. Today, the chef usually does not have time to do butchering, and the butcher in the employ of the restaurant is as extinct as the "dodo." Expert butchers in meat packing plants have taken over the job of bringing uniformity to meat servings and making it possible to keep ready, easy-to-inventory stocks on hand. Thus, the chef is released from the onerous duty of supervising the meat portioning and can turn his talents to the creating of new and appetizing dishes. Some of these dishes and recipes are presented in the article.

Workman's Compensation. State compensation laws, for the most part, cover employees for injuries arising "in course of" and "out of" their employment. "In the course of employment" connotes an injury sustained in the performance of some required duty done directly or incidentally in the service of the employer. An employee who is injured when engaged, not in the service of an employer, but in pursuance of the employee's private or personal business, disconnected with the employment, is not entitled to compensation. For example, an employee who purchases her meals at a discount in her employer's establishment cannot collect compensation for injuries resulting from the consumption of such food. An employee who must take meals as part of her wages could collect as could the employee, who, while on duty, is struck by a piece of steel from a workman's hammer, or is willfully injured by a customer.

Cleanliness. The subject of food protection is the theme for a new color movie, "How Clean Is Clean?" presented by The National Sanitation Foundation and the Conference of Municipal Public Health Engineers. The movie tells the story of the promotion of environmental sanitation through the joint efforts of industry and public health workers and shows what can be accomplished through the cooperative efforts of industry and public health services in educating the citizen and customer.

WHAT'S NEW IN HOME ECONOMICS

Vol. 21, April, 1957

* Best ways to cook protein foods and why.—p. 172.

Best Ways to Cook Protein. In general, low temperature for both top-of-range and oven cookery is the key in preparing protein foods correctly. Protein coagulates quickly and easily in the presence of heat. The correct method to use in preparing meat depends on the tenderness of cut. Less-tender cuts are pounded, aged, ground, or treated with proteolytic enzyme tenderizing agents, and then cooked in moist heat. Tender cuts are best cooked by dry heat. In both cases low temperatures (325°F.) are best. Cook poultry as you would meat at moderately low temperatures. Roast turkeys and chickens should not be basted or covered. Fryers should be simmered, not boiled in liquid. Fish should not be overcooked. Fat fish are suitable for baking and broiling, lean fish for boiling, but all fish may be fried. Oven-fried fillets may be cooked in a very hot oven for a carefully controlled length of time. All eggs and egg dishes should be cooked at relatively low temperatures because the protein of eggs coagulates when rapidly heated. Simmer, do not boil, eggs in the shell, and cool immediately after cooking. Remove custards, soufflés, and omelets from heat as soon as a knife, plunged in about an inch from the edge, comes out clean. Gentle heating makes cheese tender and blendable, where as high heat makes it tough, stringy, and rubbery. Canned or frozen prepared main dishes should be cooked according to instructions on the label.

BLENDABANANA

with milk...

a new nourishing rich drink!

Bananas teamed with milk provide the kind of balanced nourishment needed in every daily menu. Along with milk's body-building nutrients, bananas supply a generous helping of natural sugars, vitamins and minerals. Teach your students the value of soundly nourishing foods that are fun to serve. Feature banana shakes in a lesson soon.

BANANA SHAKES

Banana Milk Shake: Mash a ripe banana* with a fork and shake with a glass of cold milk. Or mix a cut-up ripe banana* and a glass of cold milk in your blender.

VARIATIONS

Choconana Shake: Add 1 tbsp. chocolate syrup before blending.

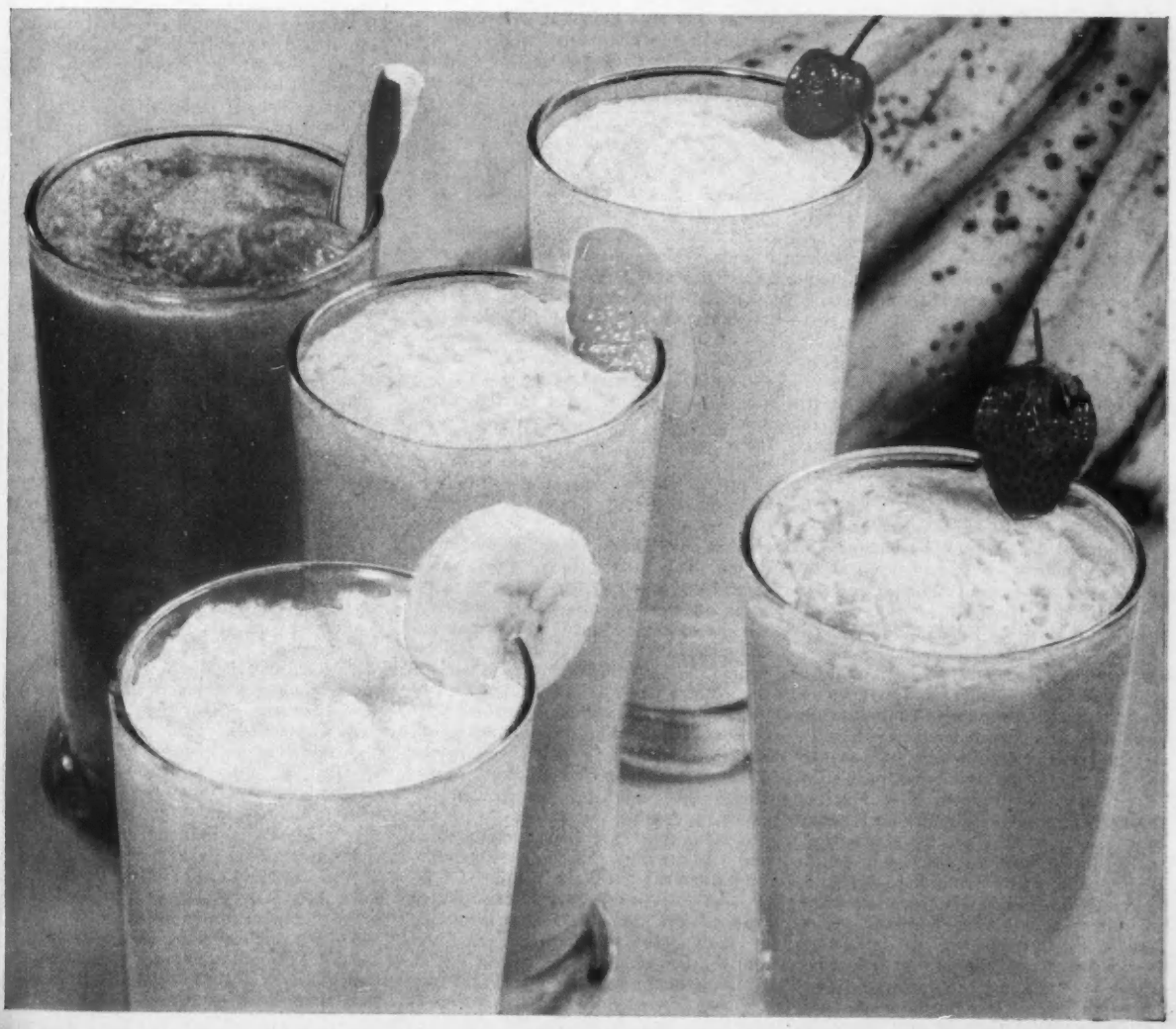
Banana-Berry Shake: Add 2 tbsp. frozen strawberries, raspberries or any favorite berry before blending.

Banana-Peach Shake: Add 1 tbsp. peach preserves before blending.

Banana Frosted: Add 3 tbsp. vanilla ice cream before blending milk shake.

**Use fully ripe bananas . . . yellow peel, flecked with brown.*

UNITED FRUIT COMPANY



40th Annual Meeting—October 22–25, 1957
Florida—The Springboard to the Caribbean

FLORIDA Part II

East or West—Vigorous Variety, Much Hospitality

AFTER THE ADVENT OF THE RAILROAD, Miami bloomed and boomed, a haven for dreamers and avid speculators, until the dramatic blow that struck the whole country and the world flattened Florida, too. During the depression hundreds of little towns hanging on Miami's new coattails curled up and quietly died.

BUT TODAY THEY'RE GROWING AGAIN, resurrected and flourishing in the never-changing tropical climate. Boca Raton, Hollywood-by-the-Sea, Coral Gables, and fabulous Cypress Gardens now attract as many settlers as vacationers. If the test of charm is permanent devotion, Florida's smaller towns and resorts have charm. As each year of the new boom spins by, their populations increase at an enviable rate.

EXPANSION IS EVIDENT EVERYWHERE, beginning way back when the old railroad connecting the Keys was washed out by the hurricane of '35. The once-rail-route is now the breath-takingly beautiful Overseas Highway. And more roads spanning the Atlantic are contemplated as promoters, business men, and now-native settlers bring the dream of "oceania suburbia" to reality.

IF IT IS CLEAR that Florida's East Coast has settled for solid, sensible, and continued rapid growth, then it is equally clear that the West Coast and the rich Everglade lands are rolling out of slumber to face a future that is already Miami's past.

EAST, WEST, NORTH, AND SOUTH, Florida differs and so offers atmosphere to please the lover of changing scenes. A planned or even random motor trip can take you to still, inland lakes where tourists are not tourists but "the season's visitors" and where it is fashionable to sit-and-sip in orange-blossom breezes or fish quietly for big-mouthed bass.

AND IN DIRECT CONTRAST, you may come upon a last-ditch stand of long lost individualists forbiddingly lodged on the Gulf Coast. In a holdover haven from smuggling and prohibition days, this colony is located on the edge of Big Cypress Swamp. Criminals are welcome and Federal men dare not enter.

PERHAPS LUXURIOUS, GRACIOUS LIVING is more your style. If so, you may enjoy the relaxed, well-tempered, and sunny pace in eminently civilized Fort Lauderdale or Sarasota, where the arts as well as business flourish. Many well known writers and artists live in Sarasota, and, perhaps, as a result, the town has taken on the triple seals of character, hospitality, and intelligence.

YOU'LL LIKE FLORIDALAND . . . because it is not just the home and playplace of celebrities, press agents, and promoters. Educators, scientists, industrialists, retired men and women, as well as homemakers, all say you can "grow" in Florida.

SIGNIFICANT DATES

"Go to Meeting" day will be Tuesday, October 22, when the Business Meeting of the Association and the State Officers Meeting will be held at the Dinner Key Auditorium, starting at 1:30 and 3:45 respectively.

The Conference of Faculties of Colleges and University Home Economics Departments and Approved Dietetic Internships will be in session Thursday, October 24, from 9:00 a.m. to 12:00 noon at the Hotel McAllister.

Early morning conferences will give way to registration and the visiting of exhibits from 8:30 until the first sessions—10:30 on Tuesday and 9:30 on Wednesday and Thursday. The conferences will be scheduled throughout each day except on Friday when they will be held at 9:45 a.m. at the Hotel McAllister.

See the May issue of the JOURNAL for a reference to the meetings of the House of Delegates.

ISLAND HOPPING IN THE CARIBBEAN

Just off the doorstep of Miami are islands which offer you totally new experiences. Dissimilar from one another in foreign flavor, in peoples, and customs are the three highly scenic islands of Jamaica, Haiti, and Puerto Rico.

The first tourist to visit *Jamaica* was Mr. C. Columbus who tarried there involuntarily, his ships having been forced aground in a storm. Mountainous, lushly tropical, Jamaica is beautiful along its shores and rugged interior.

Spaniards were in control of the island until 1655, exterminating the Arawak Indians and introducing slaves from Africa. The gentlemen of Spain were encouraged to emigrate by such roisterous buccaneers and pirates as Henry Morgan of England, leader of freebooters and most instrumental in driving out the Spaniards, who was knighted and became the island's first English governor.

The most rewarding diversion, outside of sea bathing and sunning on beautiful beaches, is taking long drives through the magnificient countryside. Highly recommended is an all-day excursion from Kingston north to Annotto Bay, to Port Maria, Ocho Rios, and the dramatic Dunn's River Falls. You will visit the Hope Botanical Garden which is comprised of 200 acres of tropical flora, including a large collection of orchids. You will also see Fern Gully and the Blue Lagoon where you can go river-rafting.

Possibly you will want to visit Copra, the cocoanut oil factory, and Gracabessa, "Golden Head," the scene of banana boat loading.

Haiti (which means highland), the Negro republic, is a voodoo-drumming portion of an island, said to be charming, magnetic, and mysterious.

Its history records an unfortunate Christmas Day in 1492 when the itinerant Mr. Columbus' flagship was wrecked on a Haitian reef. The gentleman left a band of Spaniards to inhabit La Navidad, a fort settlement, and sailed away. These settlers destroyed the Arawak Indians, imported African slaves, and eventually were driven away by French freebooters, called *boucaniers*.

Inspired by the principles of liberty and equality reverberating from France during the French Revolution, the peoples of the island engaged in civil war. Such leaders as Toussaint L'Ouverture, the descendant of an African chief, Dessalines, Christophe, Petion, and Maurepas shared in the gory, hate-ridden struggle toward the eventual birth of a nation of ex-slaves.

Port-au-Prince, the capital, is a city of little houses with balconies, lattices, and wooden lace, appealingly grotesque. A strange sight here is the famous Iron Market, a sheet-iron building with Mooresque turrets, intriguing because of its commercial and human confusion. Other edifices of interest are the President's Palace and the Cathedral, remarkable for its brilliant murals, painted by natives.

Undoubtedly, you will want to drive to Petionville and Kenscoff, up in the mountains. If time and energy permit, you will take the trip to the Citadel, one of the world's mightiest fortresses. It was built by King Henri Christophe for his last stand against the French. Massive walls and bastions rise from the top of a 3,000-ft. mountain, an awesome sight viewed from the ground or from a plane.

At the foot of the mountain are the ruins of the Palace of Sans Souci, built by Christophe for his fantastic court, simulating the Palace of Versailles.

The countryside of Haiti invites exploration, but only the stout-hearted will go far afield, bouncing in cars or overloaded busses.

Pan American World Airways has planned a nine-day tour of Jamaica, Haiti, and Puerto Rico, beginning October 26. You may write Charles Kirk for particulars. The address is 30 South Michigan Avenue, Chicago 3.

From your far from humble base of operations, the Caribe Hilton, in *Puerto Rico*, you will take jaunts to see old-world sights including San Cristo Chapel, one of the smallest churches in existence, and El Yunque, a unique tropical rain forest, replete with orchids and more than two hundred species of flora.

IMPORTANT . . . MAIL YOUR APPLICATION PROMPTLY

Application for Housing Accommodations

THE AMERICAN DIETETIC ASSOCIATION

Miami, Florida • October 22–25, 1957

For your convenience in making hotel reservations for the coming meeting of THE AMERICAN DIETETIC ASSOCIATION October 22–25, 1957 in Miami, hotels and their rates are listed below. Use the form at the bottom of this page, indicating your first, second and third choice. Because of the limited number of single rooms available, you will stand a much better chance of securing accommodations of your choice if your request calls for rooms to be occupied by two or more persons. All reservations must be cleared through the Housing Bureau. ALL REQUESTS FOR RESERVATIONS MUST GIVE DEFINITE DATE AND HOUR OF ARRIVAL AS WELL AS DEFINITE DATE AND APPROXIMATE HOUR OF DEPARTURE, ALSO NAMES AND ADDRESSES OF ALL PERSONS WHO WILL OCCUPY RESERVATIONS REQUESTED *MUST* BE INCLUDED.

Hotel	Single	Double	Twin	Suites
ALCAZAR	$5.00	$7.00	$8.00	$14.00
BISCAYNE PLAZA	5.00–6.00		7.00–8.00	
BISCAYNE TERRACE	8.00		10.00–14.00	
THE ROBERT CLAY	5.00–6.00	5.00–7.00		
COLUMBUS*	6.00–8.00		8.00–17.00	30.00
DALLAS PARK			8.00	12.00–15.00
EVERGLADES	4.00–6.00		6.00–9.00	14.00–15.00
McALLISTER*	6.00–8.00	9.00–12.00	11.00–15.00	24.00–40.00
MIAMI COLONIAL	6.00	7.00	8.00–12.00	
PATRICIA	7.00		7.00	
THE TOWERS	6.00		7.00–8.00	12.00

(*) Headquarters hotels

In the event that the hotel room rate structure is changed prior to the above convention these rates will be changed accordingly.

ALL RESERVATIONS MUST BE RECEIVED PRIOR TO: September 20, 1957

American Dietetic Assn. Housing Bureau
320 N.E. Fifth St.
Miami 32, Fla.

Please reserve the following accommodations for: THE AMERICAN DIETETIC ASSOCIATION Convention in Miami, Florida, October 22–25, 1957

Single Room _____ Double Bedded Room _____ Twin Bedded Room _____

Other Type of Room _____

Rate: From $_____ to $_____

First Choice Hotel _____

Second Choice Hotel _____

Third Choice Hotel _____

Arriving at Hotel (date) _____ hour _____ A. M. _____ P. M. Leaving (date) _____ hour _____ A. M. _____ P. M.

THE NAME OF EACH HOTEL GUEST MUST BE LISTED. Therefore, please include the names of *both* persons for *each* double room or twin bedded room requested. Names and addresses of all persons for whom you are requesting reservations and who will occupy the rooms asked for:

_____

_____

_____

_____

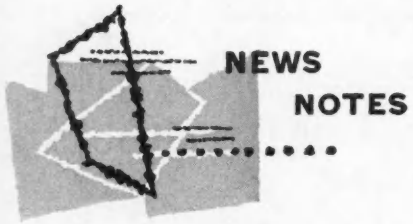
(Individual Requesting Reservations)

Name _____

Address _____

City and State _____

If the hotels of your choice are unable to accept your reservation the Housing Bureau will make as good a reservation as possible elsewhere provided all hotel rooms available have not already been assigned.



Dietitians to Aid American Indians. On July 1, 1955, the newly created division of Indian Health in the U. S. Public Health service began operations. Since that time, an effort has been made to extend more medical care and preventive health services than had heretofore been possible, when the health problems of the Indians were under the jurisdiction of the Bureau of Indian Affairs of the Department of the Interior.

Among the recognized needs which have had only limited attention are nutrition and dietetic services. Less attention has been focused on and less is known about the cultural dietary patterns of the Indians and the relation of these to health than the dietary practices of other segments of our population. Likewise, morbidity and mortality rates among Indians are still high in disease entities which were reduced long ago among the non-Indian population of the U. S. Life expectancy, too, is much shorter.

The nutrition and dietetic portion of the Public Health Service's health program for the Indians will be carried on in the fifty-six hospitals and through the clinics and services provided by the field health (or preventive health) program. At present, there are eighteen dietitians in eleven hospitals and sanatoria in the continental U. S. and Alaska. The public health nutrition aspect of the program is still in the developmental stage. It is planned that public health nutritionists, operating in a preventive program and working closely with hospital dietitians will provide a service which should be more effective in improving the nutritional status of this group than either public health nutritionists or hospital dietitians working alone.

Three A.D.A. members have been appointed to positions on the staff in the Division of Indian Health: Dr. Bertlyn Bosley, who is serving as Chief of the Nutrition Services; Minna Gutsch, who is working in the Aberdeen, South Dakota Area Office; and Helen Ger Olson, who is assigned to the Headquarters staff in Washington.

1957 *Institutions* Awards. Awards were presented to winners of the 11th Annual Food Service Contest conducted by *Institutions* Magazine at a banquet in Chicago on May 7. Judges this year included two A.D.A. members: Ruth M. Kahn, Dietetics Specialist, American Hospital Association, and LeVelle Wood, Chairman, Division of Institution Management, Ohio State University. Included among the seven analysts who assisted the judges was Dr. Mary de Garmo Bryan, Consultant, Chicago.

Installations to which awards were made this year included a number directed by A.D.A. members. These are:

Merit Awards

Abington Senior High School, Abington, Pennsylvania—Margaretta S. Plewes, Cafeteria Director

Home Economics Department, University of Illinois, Urbana—E. Evelyn Smith, Professor of Institution Management

Jessie Alice Cline Restaurant, Mission, Kansas—Jessie Alice Cline, Owner-Operator

Southeastern Louisiana College Cafeteria. Hammond—Dorothy S. Bachemin, Director of Food Services

Honor Awards

Arthur L. Johnson Regional High School, Clark, New Jersey—Margaret Maitland, Manager

Mount Sinai Hospital, Milwaukee—Rita Bedessem, Chief Dietitian

St. Elizabeth Hospital, Utica, New York—Sister Mary Paul, Head Dietitian

University of Rochester, Rochester, New York—Clara E. Sheppard, Director of Food Service

Stormont-Vail Hospital, Topeka, Kansas—Viola G. Hart, Director of Dietetics

Wakefield Memorial Hgih School, Wake-Wakefield, Massachusetts—Martha Cummings, Manager

Dr. Whitacre Honored. In Texas this year the honor of being named the "home economist of the year" has gone to Dr. Jessie Whitacre, Texas A. & M. College, College Station. This award, which was initiated four years ago by the Texas Home Economics Association, carries with it a scroll and an honorarium of $25.

Legislation to Test Chemicals in Foods. The Department of Health, Education, and Welfare has recommended to Congress a bill to require advance testing of chemicals to establish their safety before they are used in foods. Under this law, chemical manufacturers or others concerned would be required to furnish the Food and Drug Administration with scientific evidence establishing that proposed uses of chemical food additives would be safe. Based on such evidence, regulations would then be issued permitting safe use of additives. This bill, as recommended, closely resembles legislation enacted three years ago concerning chemical pesticides used on crops and other raw agricultural commodities. The new proposal would provide additional controls over the distribution and use of chemical substances in the production, processing, manufacturing, packaging, preservation, shipping, and storage of foods.

Canadian Dietetic Association Meeting. June 12 through 14 are the dates of the 1957 Annual Convention of the Canadian Dietetic Association in Quebec City. The convention program is planned about the four "F's"—facts, friendship, fun, and French—and will include:

"Planning for Efficiency in Food Service"—a panel discussion

Violet Ryley—Kathleen Jeffs Memorial Lecture—Bill Boss, Canadian press foreign correspondent

"Nutrition and Renal Disease"—Dr. M. Hoffman, Jewish General Hospital, Montreal

"The Dietary Department as Seen by the Hospital Director"—Dr. G. Turner, Royal Victoria Hospital, Montreal

"Atherosclerosis Project"—Dr. A. Little, F.R.C.P. (C), Heart Clinic, Sunnybrook Hospital, Toronto

"Various Types of Food Service in Hospitals"—a discussion

"New Trends in Institutional Food Service"—Dr. Mary deGarmo Bryan, Chicago

Food and Nutrition Board Meeting. Reports from eight committees were heard when the Food and Nutrition Board met for the fifty-first time in Washington on April 5.

In reporting for the Committee on Fats, Dr. Paul Day described the difficulty in reaching agreeable conclusions with respect to the role of fats in human health, because current research has not yet provided decisive relationships. At present, no suggestion of modification of fat consumption in the general population appears to be warranted.

Dr. J. B. Allison indicated that the report of the Committee on Amino Acids is nearing the point where it will be ready for the Board to review next fall. It will include sections on basic concepts, amino acid requirements, effects of amino acid deficiencies, amino acid imbalance, composition of diets, and problems of amino acid supplementation.

For the Committee on Dietary Allowances, Dr. R. E. Shank reported that revisions in the Recommended Dietary Allowances, last revised in 1953, are progressing. No major changes are contemplated in the recommended levels, but revisions of the text will bring up-to-date and elaborate the scientific bases of the Allowances.

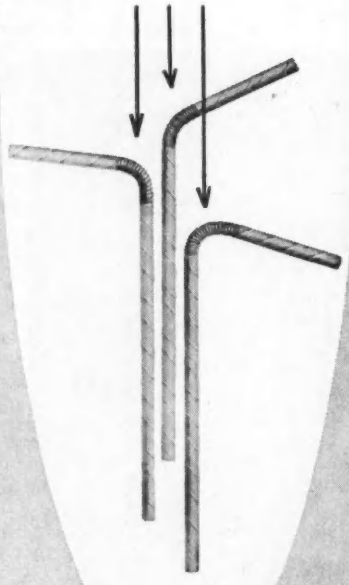
This meeting was attended by A.D.A.'s Liaison Representative, Dorothea F. Turner, Editor of this JOURNAL.

Army Recruitment for Dietitians. A new 20-min., 16 mm Kodachrome film has been prepared by the Army Medical Specialist Corps to show on-the-job activities of the Corps and especially to produce an increased awareness of dietetic activities.

Also released by the AMSC is a new brochure, "Your Bright Tomorrow." Benefits of commisioned rank in the Army, including financial rewards, rank and prestige, and travel are pointed up. Such general information is followed by a description of opportunities and qualifications for dietitians, physical therapists, and occupational therapists, respectively. Copies of the brochure may be obtained from the nearest Army Medical Specialist Corps Procurement Officer.

WHO Meeting. On May 7, the Tenth World Health Assembly convened

DAY, 1957
HELP AT HAND!
Good solution for keeping your Special Diet patients on the menus you prescribe. For patients requiring bland, soft or low-residue diets, Gerber Strained Foods have a minimum of seasoning, a smooth, pureed consistency. For patients with chewing difficulties, Gerber Junior (minced) Foods are particularly useful. Both types require no preparation; are economical and easy to obtain at local stores. Wide variety encourages appetites.
Nutritious — easy to digest
Gerber Strained Foods are processed for high retention of food values. Fruits and vegetables have a low crude-fiber content. Meats have a low fat content.
Uniform quality
Gerber Strained and Junior Foods are quality-controlled for consistent uniformity. The Strained Foods come in small "one-meal" containers which reduce left-over waste.
Excellent choice
4 Cereals—over 75 fruits, vegetables, meats, soups and desserts make substitutions for finicky eaters possible.
Gerber.
PRODUCTS



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in Geneva, Switzerland to review the year's work of the World Health Organization and plan for future programs.

In 1956, malaria eradication has been one of the main concerns of WHO, according to Director-General M. G. Candau. Mosquito resistance to insecticides was responsible for shifting WHO's malaria policy last year from mere control to eradication. A dramatic race is now under way between the effectiveness of the chlorine-based insecticides on the one hand and the capacity shown by mosquitos to resistance to insecticides. In certain parts of Greece, for example, such resistance has already developed. It was suggested that if such a situation arises in other areas, methods of interrupting transmission of the disease might have to be changed; one possibility might be the distribution of salt for human consumption containing anti-malarial drugs. Preliminary studies of medicated salt have been encouraging.

Reports on other WHO programs concerned: yaws and venereal infections, tuberculosis, rabies, trachoma, leprosy, poliomyelitis, atomic energy in relation to health, and international quarantine.

U.S.D.A. Report. No. 6 in the U.S. D.A.'s Household Food Consumption Survey 1955 Reports has been released under the title, *Dietary Levels of Households in the United States*. It is the first of five reports on dietary levels, to follow the five reports on food consumption. This report, No. 6 in the series, deals with the U.S. as a whole and indicates that American eating patterns in the last twenty years have shown great improvement. Today, probably as few as a tenth of U.S. households have diets that would be classed as poor, compared with one-third in 1936. Rising real incomes and greater understanding of the importance of good diet are two factors that have influenced this improvement. The bread and flour enrichment program begun in the early forties has helped to increase intake of iron, thiamine, niacin, and riboflavin. Increased use of milk and meat has meant higher levels of calcium and protein, as well as the B-vitamins.

The survey covers the amounts of food used by households, but does not attempt to estimate waste. However, the average quantity of food brought into American kitchens could supply families with more than enough of eight important nutrients, as well as sufficient calories.

In about a third of the households, diets did not meet calcium recommendations, usually because they did not use enough milk. A quarter of the households had low consumption of ascorbic acid-rich fruits and vegetables. However, 90 per cent had food providing two-thirds of the allowances for ascorbic acid and calcium, and more than 90 per cent had food enough to provide at least two-thirds of the allowances for protein, iron, thiamine, riboflavin, niacin, and vitamin A.

After introductory tables describing the population of the survey, the data on nutritive value of the diet are presented according to nine nutrients and calories on the basis of "per person," "per nutrition unit," and by food group. Another table gives the division of household food dollar and contribution of food groups to nutritive value of diets. This is followed by tables on availability in the food supply of: calories, fat, iron, vitamin A value, thiamine, riboflavin, niacin, and ascorbic acid, according to the size and type of household.

Reports No. 7, 8, 9, and 10 will cover the four geographical sections of the U.S.

Copies of this report are on sale by the Government Printing Office, Washington 25, D.C., for 45 cents each.

Nutrition Leaflets in English and Spanish. To aid families on public assistance in New York City, the Department of Welfare in co-operation with the Nutrition Bureau of the city's Department of Health, has prepared a booklet, "Meals to Keep Your Family Healthy" as well as a market order for a week's menus. So that it can be used by the Puerto Rican families in the city, too, it has been translated into Spanish, with special attention being given to fitting the suggestions to the Puerto Rican food pattern. The booklet describes and illustrates the Basic 7 and daily food requirements, explains how to achieve balanced, appetizing diets on a limited budget, and lists menus for a week with tips for shopping.

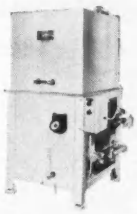
Limited supplies of the leaflet, either in Spanish or English, are available from the Department of Welfare, The City of New York, 250 Church Street, New York 13.

Nutrition Booklets from Pennsylvania. Three new leaflets on nutrition for the public have been released by the Division of Nutrition, Pennsylvania Department of Health. Two are on obesity and reducing: "Your Figure and Your Food" and "Your Food and Your Weight." The latter was written specifically for teen-agers at the request of school nurses. The first presents current concepts of weight control with emphasis not only on restricted calories but also on adequate protein at each meal.

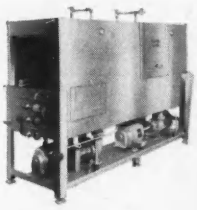
The third leaflet, "Enjoy Food and Health in the Later Years," was prepared to help "senior citizens." This publication attempts to present facts on food and nutrition from the viewpoint of enjoyment of eating rather than "deprivation."

Publication on Yeast. *Yeast—Its Characteristics, Growth, and Function in Baked Products* is the title of a new report from the Research and Development Command, Quartermaster Food and Container Institute for the Armed Forces. Edited by Charles S. McWilliams and Martin S. Peterson, it covers the activities of a symposium held in June 1955. After introductory sections on background and basic principles, papers are included on the following topics:

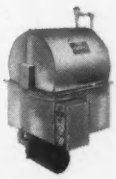
"Effects of Yeast on Bread Flavor"
"Evaluation of Bread Baking Properties of Various Genera and Species of Yeasts"



Toledo Dishwasher Door Type, Timed Automatic.



Toledo Dishwasher with Conveyor Pre-Wash.



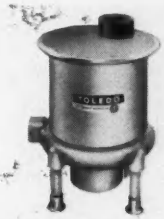
Toledo Dishwasher Counter Type.

TOLEDO DISHWASHERS

matched to your needs!

29 models for top dishwashing efficiency! Performance-proved Toledo Dishwashers offered in sizes and capacities from 450 dishes per hour (counter dishwasher) . . . up to heavy-duty three tank machines averaging 12,600 dishes per hour.

Toledo Disposer ½ HP with 18" Cone.



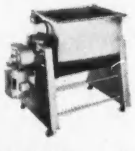
Toledo Disposer Large capacity with silver saver.

TOLEDO DISPOSERS

banish food waste problems!

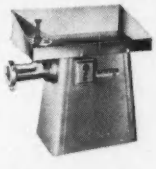
Shred all food wastes and flush them down drain. Truly sanitary, efficient. ½ HP sizes for dishscraping. 3 and 5 HP for food preparation areas.

4 Keys to Better Cost Control

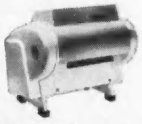


Toledo Mixers—thoroughly mix chopped meats, sausage, other foods. Stainless steel tub, 150 lb. capacity.

Toledo Slicers—feature illuminated platter, exclusive "Quick-Weigh" Estimator.



Toledo Choppers—outstanding in performance and appearance. Full range of models, 1/3 HP to 25 HP.

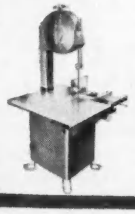


Toledo Hi-Speed Steak Machines—produce those tempting, tender steaks 40% faster.

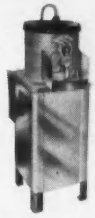
TOLEDO FOOD MACHINES

save time . . . make foods more appetizing!

Toledos handle big work loads in food preparation with cost-cutting speed and efficiency . . . add appetite-appeal to foods processed, too! And advanced Toledo design features provide attractive appearance, easy cleaning, and long-life dependability.



Toledo Saws—have extra large working area. Models with 16" or 12" wheels.



Toledo Peeler — Floor Model Type

Toledo Peeler — Portable Bench Type

TOLEDO PEELERS

. . . fast, efficient

Toledo Peelers do the work with efficient "double action" . . . achieved by sharp abrasive on both disc and cylinder. Rolling motion of the vegetables insures complete "skin deep" peeling with a minimum of waste. Full choice of sizes from 15 lb. (Portable Bench Type) to 70 lb. capacity.

Today, more than ever it pays to go TOLEDO® all the way

That fact is proving out for food service operations everywhere. The brilliant, dependable performance of new TOLEDOS, is saving time and kitchen labor, boosting efficiency of handling food, dishes and food wastes. If you, too, want to streamline your kitchen operations, get the cost control and time-saving so important today, why not take an interesting informative look at the wide choice of Toledos offered for *all* your kitchen machine needs. Write today for new catalogs on the Toledos that interest you.

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Food service equipment designed, engineered, fabricated and installed in any type operation, expertly fitted to available space. You can depend on thorough cooperation by your Southern Dealer, from initial analysis of your food service problems through complete installation and reliable maintenance for the years to come. Get expert help with your next kitchen equipment problem or layout—call your "Custom-Bilt by Southern" dealer, or write Southern Equipment Company, 4550 Gustine Ave., St. Louis 16, Mo.

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"CUSTOM-BILT BY SOUTHERN" DEALERS: **ALABAMA,** BIRMINGHAM—Vulcan Equip. & Supply Co.; MOBILE—Mobile Fixture Co. **ARKANSAS,** LITTLE ROCK—Krebs Bros. Supply Co. **COLORADO,** DENVER—Arnholz Coffee & Supply Co. **FLORIDA,** DAYTONA BEACH—Ward Morgan Co.; JACKSONVILLE—W. H. Morgan Co.; MIAMI—J. Conkle Inc.; ORLANDO—Turner-Haack Co.; TAMPA—Food Service Equip. & Engr. Corp. **ILLINOIS,** PEORIA—Hertzel's Equip. Co. **INDIANA,** EVANSVILLE—Weber Equip. Co.; INDIANAPOLIS, MARION—National China & Equip. Corp. **IOWA,** DES MOINES—Bolton & Hay. **KANSAS,** WICHITA—Arnholz Coffee & Supply Co. **KENTUCKY,** LEXINGTON—Heilbron-Matthews Co. **LOUISIANA,** NEW ORLEANS—J. S. Waterman Co., Inc.; SHREVEPORT—Buckelew Hdwe. Co. **MICHIGAN,** BAY CITY—Kirchman Bros. Co.; DETROIT—A. J. Marshall Co. **MINNESOTA,** MINNEAPOLIS—Aslesen Co.; ST. PAUL—Joesting & Schilling Co. **MISSOURI,** KANSAS CITY—Greenwood's Inc. **MONTANA,** BILLINGS—Northwest Fixture Co. **NEBRASKA,** OMAHA—Buller Fixture Co. **NEW YORK,** ALBANY—Lewis Equip. Co. **NORTH CAROLINA,** ASHEVILLE—Asheville Showcase & Fixture Co.; CHARLOTTE—Hood-Gardner Hotel Supply Corp. **NORTH DAKOTA,** FARGO—Fargo Food & Equip. Co. **OHIO,** CINCINNATI—H. Lauber & Co.; CLEVELAND—S. S. Kemp Co.; COLUMBUS—General Hotel Supply; TOLEDO—Rowland Equip. Co. **OKLAHOMA,** TULSA—Goodner Van Co. **PENNSYLVANIA,** ERIE—A. F. Schultz Co. **SOUTH CAROLINA,** GREENVILLE—Food Equipment Co. **TENNESSEE,** CHATTANOOGA—Mountain City Stove Co.; KNOXVILLE—E. Carleton Scruggs; MEMPHIS—House-Bond Co.; NASHVILLE—McKay Cameron Co. **TEXAS,** AMARILLO—Arnholz Coffee & Supply Co.; CORPUS CHRISTI—Southwestern Hotel Supply, Inc.; EL PASO—El Paso Hotel Supply Co.; SAN ANTONIO—Southwestern Hotel Supply, Inc. **UTAH,** SALT LAKE CITY—Restaurant & Store Equip. Co. **VIRGINIA,** RICHMOND—Ezekiel & Weilman Co. **WEST VIRGINIA,** CLARKSBURG—Parson-Souders Co. **WISCONSIN,** MILWAUKEE—S. J. Casper Co.

"Theoretical and Practical Aspects of Brew Fermentation"

"Relationship of Yeast Fermentation, Ingredients, and Bread Processing Methods upon Finished Bread Quality"

"Role of Active Dry Yeast in Commercial Bread Manufacture"

A limited number of copies are available to libraries and research organizations and may be obtained from the Institute, 1819 West Pershing Road, Chicago 9.

Home Milk Dispensers. The use of home milk dispensers, small models similar to commercial dispensers widely used in restaurants and institutions, is being investigated by the Colorado and Idaho Agricultural Experiment Stations.

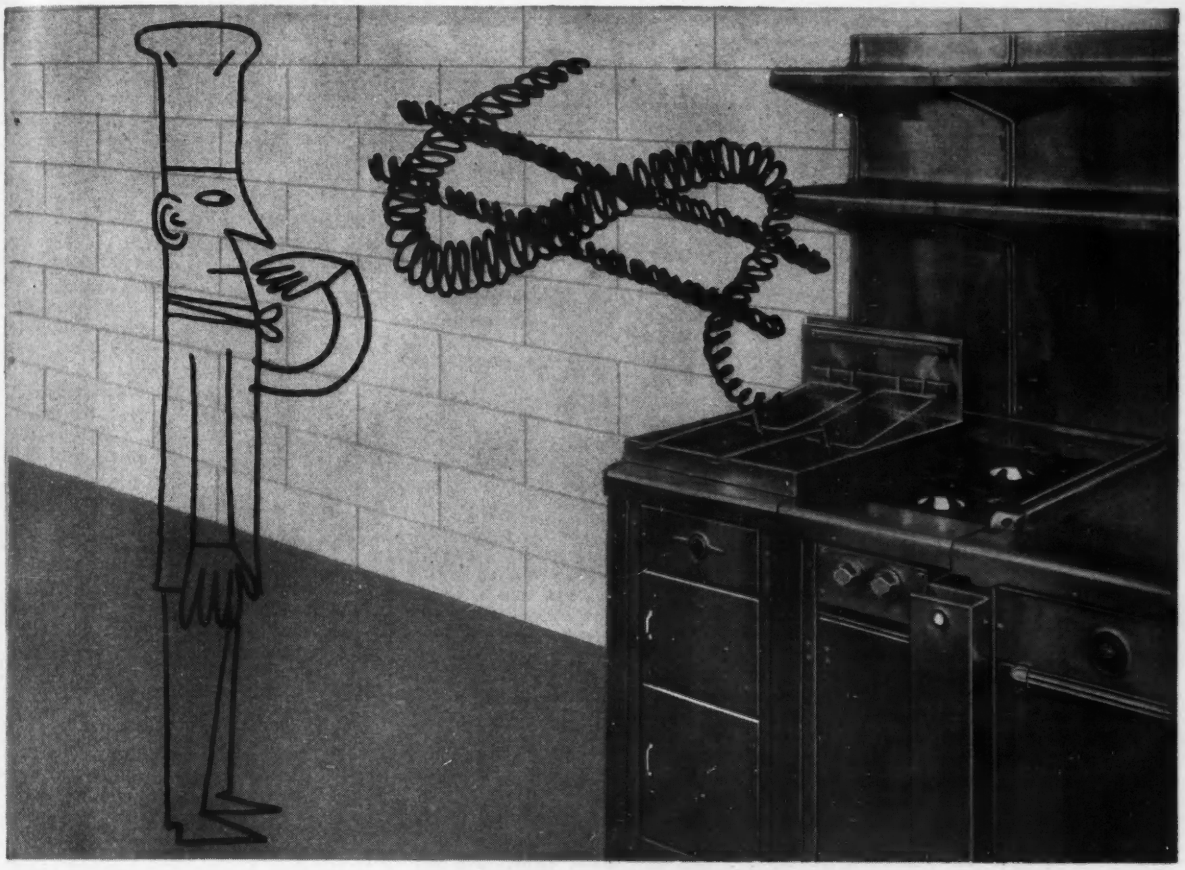
In Colorado, dispensers owned by the State Experiment Stations are being placed in homes using at least 18 qt. of milk a week to see how families like them during a six-week trial period. Thus far, the Colorado home-makers seem favorable to the idea.

In Idaho, some 477 families, receiving 4 qt. milk or more at each delivery, tried out the dispensers. Almost all agreed on the convenience of the dispenser, but it was found that the dispenser would fit in only 57 per cent of the home kitchens. Where it would fit, the families were interested in having it—but only if savings in the price of milk warranted it. They wanted to save from 2 to 6 cents on a quart of milk.

These home milk dispensers look like small refrigerators, from which milk can be drawn into cup, glass, or pitcher by lifting a valve handle. White enamel outside, stainless steel inside, they measure 2½ ft. high, 2 ft. wide, and 1½ ft. deep. They hold two removable 3-gal. milk containers, each with its own tube leading to the dispensing valve. They also have a compartment for cream, butter, and cottage cheese. The electric refrigerating unit holds the interior at an even 35°F. The dispenser may stand on a kitchen counter, table, or cabinet. Its advantages are said to be: Milk is kept colder than in the family refrigerator, thus allowing it to keep well and be served at the temperature most people prefer for drinking. Homemakers don't have to wash and look after milk bottles. More free space is available in the home refrigerators when space is not needed for milk.

Egg Grading and Cooking Quality. Is there a relation between egg grades and cooking quality of eggs? Although eggs graded by candling into AA, A, B, and C grades have been marketed for more than thirty years, only recently has research by state agricultural experiment stations sponsored by the U.S.D.A. been made. The answer to the question is "yes," there *is* a relationship between grading and cooking quality.

When taste panels scored soft-cooked eggs, the high grades of eggs rated best for flavor. Flavor differences carried over to mixed dishes, with better flavored baked custard and angel food cakes coming from top quality eggs. Texture,

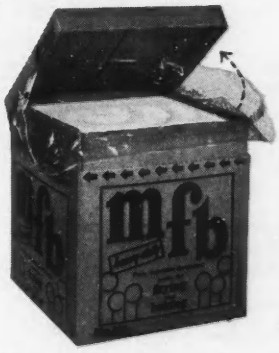


Holy smoke! Better call on heavy-duty MFB

...the shortening with the high smoke point. When you get a "smoke signal" from your fryer, better look at your temperature control . . . or your shortening. If shortening break-down is your problem, then delicate food flavors are being lost . . . and your equipment is getting all gummed up . . . you're having too much fat absorption and burn-off.

Better switch to Heavy-Duty MFB—the shortening with the high smoke point. It's made to stand up under heaviest continuous frying. It's a lot more economical in the long run!

Here's a tip. Heavy-Duty MFB bakes as well as it fries. So simplify your storing . . . use all-purpose, Heavy-Duty MFB.



NEW ZIP-OPEN RE-SEALABLE CARTON

50 lbs. of Heavy-Duty MFB costs even less per pound than in the 110-lb. can!

Shortening is no sideline with us . . .
that's why Heavy-Duty MFB fries and fries and fries!

The Wesson Oil People

New Orleans, Louisiana

Here's 24... Choice of many more

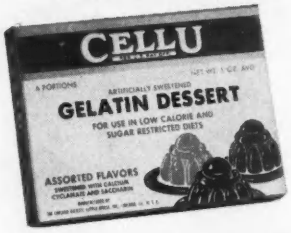
CELLU Juice Pak Fruits
CELLU Water Packed Fruits
CELLU Vegetables
CELLU Juices
CELLU Purees
CELLU Soups
CELLU Fish
CELLU Chicken
CELLU Milk
CELLU Peanut Butter
CELLU Relishes
CELLU Jelly
CELLU Salad Dressing
CELLU Bread
CELLU Flours
CELLU Wafers
CELLU Cookies
CELLU Baking Powder
CELLU K-Salt
CELLU Sugarless Sweetener
CELLU Gelatin Desserts
CELLU Puddings
CELLU Cool-Sip
CELLU Waylow Drops

and . . .

Here's another NEW CELLU dietetic product

CELLU GELATIN DESSERT

A REAL DESSERT TREAT for those on reducing or diabetic diets



A popular, delicious, sugar-free meal-topper that adds only 13 calories per serving. Unsurpassed for high quality ingredients that mold into luscious desserts or exciting salads. And it comes in six sparkling flavors: Orange, Lemon and Lime, Raspberry, Cherry and Strawberry. Each serving is in an individual envelope, 6 or 20 to a package. Assorted or single flavors. Also 1 lb. institutional size jar (1 flavor). Available salted or unsalted. *Send for a free sample.*

CHICAGO DIETETIC SUPPLY HOUSE, INC.
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CELLU® dietetic foods

DINE WELL WITH CELLU FOODS!

NOW--in 2 SIZES

2½ SIZE CAN for small institutions & large institutions with specialized requirements

No. 10 SIZE CAN For larger institutions

BOMBAY *California Valencia*
ORANGE AND GRAPEFRUIT BASES
AND ORANGE & GRAPEFRUIT BLEND

Now every institution can enjoy the tremendous budgetary-advantages of using Bombay. The new 2½ Size reconstitutes to 4 Quarts and 12 fl. ounces. The No. 10 can makes 4 gals. Same delightful taste-appeal. Same fixed standard of nutrition. If you haven't tasted Bombay, write for samples today . . . without obligation!

THE H. R. NICHOLSON CO. • Kenshaw & Oakleaf Aves. Baltimore 15, Md.

tenderness, and acceptability of cakes were also better with high quality eggs.

The quality of eggs to make stable foam is another characteristic wanted by the cook, especially when she is making sponge-type cakes. Tests with angel food cakes show that cake volume was less with lower quality eggs than with high.

Tension in Restaurants. *Restaurant Management* Magazine recently polled 4000 restaurant owners for Muzak Corporation to learn who is affected by mealtime tension in restaurants, what problems it causes, and how it can be reduced. The results indicated that 55.6 per cent of the men and 37.1 per cent of the women entering a restaurant suffer from tension at meal-time. Symptoms of this tension show up in a number of ways—and differently in men and women as indicated below:

Impatience and irritability waiting for service:
Men—58.3%; women, 49.4%
Dissatisfaction with meal
Men, 14.8%; women, 27.7%
Complaints about service
Men, 23.7%; women, 32.3%
Excessive coffee drinking, rather than eating
Men, 38.8%; women, 30%
Excessive smoking
Men, 27.4%; women, 32.6%
Physical disturbances, such as indigestion, upset stomach, and so on
Men, 21.1%; women, 18.0%

These restaurant owners were also questioned as to the symptoms of meal time tension shown among employees, with the following results:

Mistakes in orders—62.3%
Friction among employees—39.1%
Breakage, spoilage, and waste—29.1%
Impoliteness to customers—22.6%
Mistakes in money handling—21.1%

Among the solutions suggested by the restaurant owners to relieve meal time tension were: friendly service, pleasant comfortable surroundings, air conditioning, background music, soundproofing, indirect lighting, and cleanliness.

News of State Associations

California Dietetic Association. Beverly Hills was the scene of the spring meeting of the California Dietetic Association on May 8 and 9. The program included:

"Some Aspects of Vitamin B_6"—Dr. Gladys Emerson, Chairman of Home Economics, University of California at Los Angeles
"More to Pleasing the Patient than Meets the Eye"—Dr. Cora Miller, Home Econimics Department, University of California at Los Angeles
"Why Diet in Diabetes?"—Dr. Samuel Soskin, Editor of *Metabolism*
"How to Avoid Work"—Fred McFadden, School of Business Administration, University of California at Los Angeles
"Something You 'Et, No Doubt!"—Francis X. Kemp, Chief, Section of

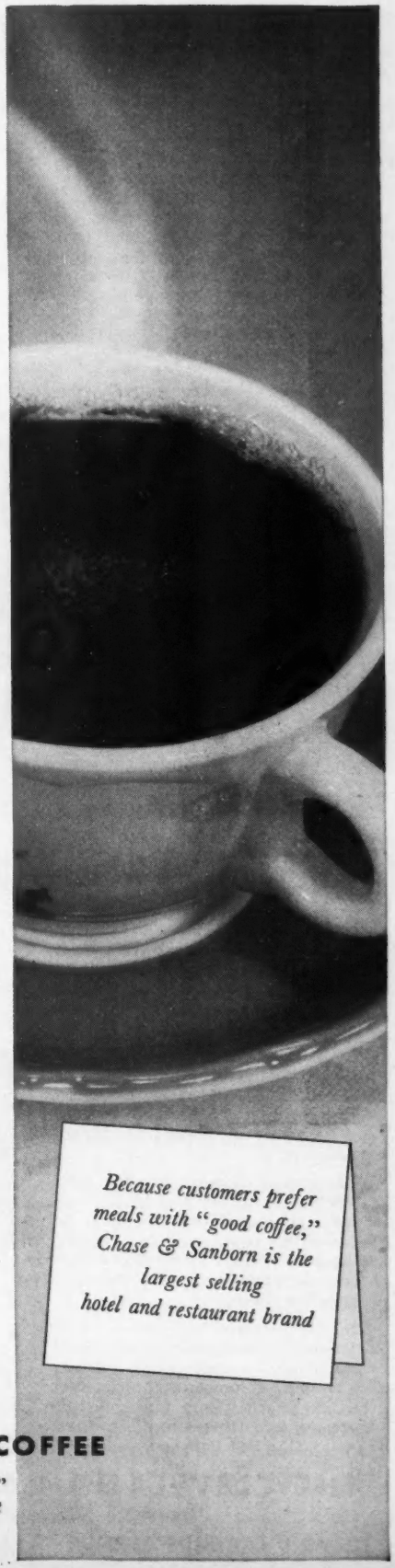
How a good cup of coffee wins more compliments for the host

... more business for the house

Chase & Sanborn coffee is particularly enjoyable with a good meal. Its full-bodied, satisfying taste imparts a sense of well-being to your guests. And they'll remember that enjoyment the next time they decide to eat out.

Quick Quote from the Davis Brothers, operators of Davis Brothers Cafeterias of Atlanta, Georgia, who say, "We like to end all meals on a high note. That's why we are so careful about the coffee we serve. Chase & Sanborn Fancy Mark coffee has proven to be a fitting climax our guests remember."

Call on Experience. Whatever your coffee problem may be, it's one worry you can safely turn over to your Chase & Sanborn representative. His storehouse of coffee "know-how" can help you serve the best cup in town. Call him today!



CHASE & SANBORN FANCY MARK COFFEE

Watch for Chase & Sanborn's "SHE DESERVES TO EAT OUT—at Least Once a Week" advertising campaign in Time, Newsweek, The New Yorker, Holiday and Reader's Digest

Food and Drugs, Los Angeles County Health Department
"Rational Objectives of Restriction of Dietary Fats in Cardiovascular Disease"—Dr. Seymour Dayton, Los Angeles City Heart Association
"Selling Yourself"—Tyler MacDonald, Vice-President, Hixon Jorgenson Advertising Agency

Bay Area dietitians recently entertained senior students of both public and parochial schools in the area at a tea at Letterman Army Hospital, for the purpose of acquainting the girls with the advantages of entering dietetics.

The *Los Angeles Region* has offered a series of meetings on current topics in diet therapy, the meetings being held from April 30 to June 4. A recent meeting of special interest dealt with "Disaster Planning," which was discussed by Dr. Robert M. Colbert, Health Service Division, Los Angeles City Civil Defense office, and Edward Russell, Director of Disaster Service, Los Angeles Chapter of the American Red Cross.

Connecticut Dietetic Association. On April 25, the Connecticut Dietetic Association held its spring meeting at Stamford. Highlights of the program were:

"Diet as It Affects Gastro-Enteritis"—Dr. Emanual Friedman, Senior Resident, VA Hospital, West Haven
"A Consultant Looks at Hospital Dietetics"—Dr. Anthony J. J. Rourke, Consultant
"Uses and Abuses of the Low-Fat Diet"—Dr. Margaret Albrink, Instructor in Medicine, Yale University, New Haven
"Are We Delegating Responsibility as Effectively as Possible?"—Jane Hartman, Food Service Specialist, Connecticut Hospital Association

A feature of the meeting was the presentation of a silver tray to Mary C. Kelly, who recently retired as Director of Food Service, Aetna Life Affiliated Companies, Hartford.

Georgia Dietetic Association. On April 25 and 26, the Georgia Dietetic Association met jointly with the Southeastern Hospital Conference of Dietitians in Atlanta to hear the following talks:

"Controlling Costs with Portion Cuts"—representatives of the National Restaurant Association and Swift & Company
"The Dietitian in the Hospital Team"—Pat Groaner, Administrator, Baptist Hospital, Pensacola
"Development in the Blood Program in the Last Twenty-Five Years"—Dr. Joseph Hertell, Southeastern Area Medical Officer, American Red Cross
"Looking at Our Profession Through a Wide Angle Lens"—Lucille Refshauge, A.D.A. President
"Food Processing and Food Infection"—Dr. John E. McCroan, Jr., Georgia Department of Public Health
"An Exposé of Hospital Practices in Russia"—Dr. Omarik Krebsifer, Moscow, USSR
"*Low-Fat Cookery*—A Book Review"—Gloria K. Warren, Durham, North Carolina

Indiana Dietetic Association. On April 10 and 11, the Indiana Dietetic Association held its 25th annual meeting in Indianapolis. The program included:

"The Food Service Supervisor"—Myrtle V. Van Horne, Michigan Department of Health
"Training for Improved Performance"—John A. Ritchey, Purdue University, Lafayette
"Quality Food"—Jane Whitney, Restaurant Department, L. S. Ayers & Co., Indianapolis
"Current Concepts on Atherosclerosis and Its Therapeutic Approach"—Dr. G. C. Chiu, Eli Lilly Research Laboratories, Indianapolis
"Changing Concepts of the Hospital and the Dietitian"—Dr. Martha O'Malley, Indiana Board of Health, Indianapolis
"Improvement of Employer-Employee Communications"—Dr. Paul Bergevin, Director of Community Services in Adult Education, Indiana and Purdue Universities.
"Association Affairs"—LeVelle Wood, Ohio State University, Columbus

Kentucky Dietetic Association. "Dietetic Horizons—Unlimited" was the theme of the twenty-third annual meet-

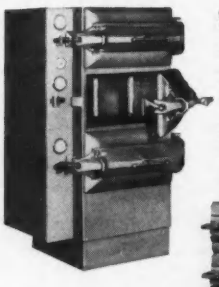
Again...Most Winners Use STEAM-CHEF

● *For the 11th consecutive year* STEAM-CHEFS and Steamcrafts have been the overwhelming choice of Institutions Magazine Food Service Contest winners.

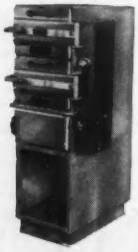
Unquestionably the selection of STEAM-CHEF and Steamcraft by a large majority of winners year after year can be no coincidence. STEAM-CHEFS and Steamcrafts *are* the choice of America's finest kitchens.

Leading architects, consultants, kitchen designers and dieticians invariably specify STEAM-CHEF or Steamcraft steam cookers... equipment suppliers and food service operators express a positive preference for them.

In 1957, more than 2 out of every 3 award-winning steamer equipped kitchens . . . representing schools, hospitals, restaurants, hotels, factories, institutions, clubs, motels colleges and universities...featured STEAM-CHEF or Steamcraft cookers. There is a STEAM-CHEF or Steamcraft steamer designed to fill your needs in gas, electric or direct-steam operated models . . . don't settle for anything less!



STEAM-CHEF "STEAMLINER" —the ultimate in heavy-duty steam cookers—streamlined, fully automatic —other models available for direct steam, gas or electric operation with 2, 3, 4 compartments.

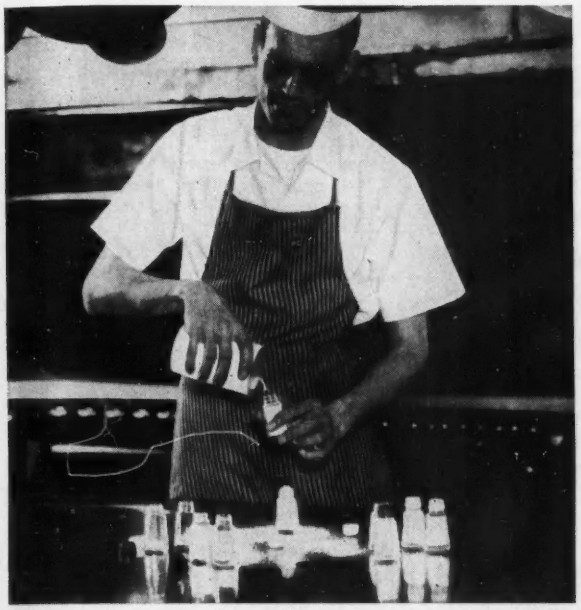


STEAMCRAFT COOKER AND WARMER for smaller requirements or as an auxiliary unit. Models available with 1 or 2 compartments for floor or table-top use.

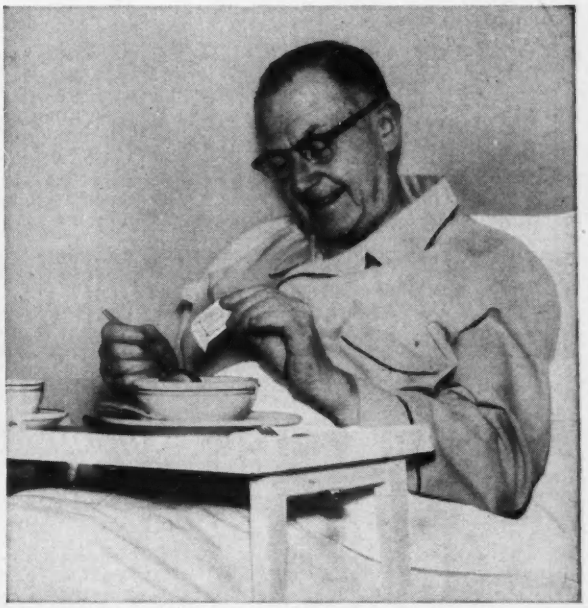
Write for complete detailed information.

THE CLEVELAND RANGE COMPANY
"The Steamer People"
3333-L LAKESIDE AVENUE • CLEVELAND 14, OHIO

How Diamond Crystal seasoning packets end danger of cross-infection from dispensers



Old-type salt, pepper and sugar dispensers are often sources of infection. Require constant washing, sterilizing and servicing. Require storage space for both themselves and bulk seasonings.



Diamond Crystal packets are individual seasoning containers. They are disposable and sanitary. Need no servicing. And your patients appreciate their modern convenience.

Exclusive Diamond Crystal salt, pepper and sugar packets are hygienic. Save you money on labor and dispenser replacement

Old-fashioned seasoning dispensers can be an expensive problem to hospitals. They get dirty quickly. Shakers and bowls need constant cleaning. Re-filling. Sterilizing.

Considering the price of labor today, servicing several thousand shakers can really run up your operating costs.

Packets solve problem

Diamond Crystal seasoning packets are disposable. Hygienic. Eliminate dangers of cross-infection from dispensers.

Each packet contains a generous serving of either pure Diamond Crystal salt; spicy ground black pepper; or fine granulated sugar. When the patient finishes his meal, the packets are thrown away.

There is never the danger of broken glass dispensers when you serve packets.

Exclusive "shaker" action

Only Diamond Crystal packets let you *shake on* seasoning. Their sturdy fluted paper construction allows the same *method* of application as old-type dispensers—without the costly need of regular washing, filling and sterilizing. Your saving on dispenser servicing alone more than makes up for the slight additional cost of packets.

Exclusive "Shaker action" of Diamond Crystal packets allows controlled application of seasoning.

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ing of the Kentucky Dietetic Association held in Louisville on April 5 and 6. The program included the following papers:

"What's New in Food and Equipment?"—John Ruffley, Research Department, National Restaurant Association, Chicago

"Consumers of Nutrition Research"—Geraldine Piper, School of Home Economics, University of Tennessee

"A Sociodrama—Exploring Human Relations"—Dr. Richard Franklin, Southern Illinois University, Carbondale

"Nutrition Today"—Dr. Jennie Rowntree, School of Home Economics, Berea College, Berea

Michigan Dietetic Association. When the Michigan Dietetic Association met on April 17 and 18 in Ann Arbor, the theme, "Developing the Total Person," was presented in the following program:

"Effective Writing"—Lewis Graff, Director of Public Relations and Advertising, Michigan Blue Cross-Blue Shield

"Making Audio-Visual Aids Work for Us"—Donald W. Ickes, Audio-Visual Education Center, University of Michigan, Ann Arbor

"Juvenile Diabetes"—George Lowrey, M.D., University of Michigan Hospital

"Rehabilitating the Polio Patient"—David G. Dickinson, M.D., Director, Poliomyelitis Respiration Center, University of Michigan Hospital, Ann Arbor

"The Role of Various Fat Particles in the Production of Atherosclerosis"—Lesem J. Baer, M.D., Chief, Cardiology Section, VA Hospital, Dearborn

"Reflections on the College Education of Dietitians"—Bessie Brooks West, Continuing Education Services Director, A.D.A.

"The Food and Drug Administration, What It Is and What It Does"—George T. Daughters, Chief, Chicago District, Food and Drug Administration

"Manna from Machines"—Walter D. Tiedeman, Executive Director, National Sanitation Foundation Testing Laboratory

"Keys to Professional Growth"—Adelia M. Beewkes, A.D.A. representative

Two scholarships were presented at this meeting: one from the Michigan Dietetic Association to Shirley Need, graduate of Wayne State University, who is now an intern at the University of Iowa; and the other, the Dubois Scholarship for Michigan, to Sally Waltemeyer, Michigan State University.

The following new officers were elected: President-Elect, Betty Taylor, Western Michigan College of Education, Kalamazoo; and Secretary, Evelyn McCormick, Gerber Products Company, Fremont.

New York State Dietetic Association. May 2 and 3 were the dates of the New York State Dietetic Association convention in Utica. The program opened with a series of conferences, which featured a speaker followed by discussion. These included:

"Effective Methods of Recruitment"—Fannie M. DeGroat, Ph.D., Chairman, Department of Home Economics, Skidmore College, Saratoga Springs

"Studies on the Effect of Various Ingredients on the Bacterial Count in Food"—Karla Longrée, Ph.D., Professor of Institution Management, Cornell University, Ithaca

"Recent Trends in Diet Therapy"—Herbert Pollack, M.D., New York City

"Institution Food Service Equipment and Layout"—Henry P. Rung, Kitchen Equipment Consultant, Ramsey, New Jersey

"Conversation about Food Cost Accounting"—Neva H. Radell, Director of Food Service, Englewood, New Jersey, Public Schools

Other features of the program were a panel discussion on "Employee Training" and special reports of the activities of the local associations in New York State. The final session of the program included two talks: "The Effect of Tranquilizing Drugs" by Constance M. Barwise, M.D., Acting Assistant Director, Marcy State Hospital, Marcy, New York; and "Feeding the Mentally Ill" by Katherine E. Flack, Director of Nutrition Services, New York State Department of Mental Hygiene, Albany.

The Greater New York Dietetic Association held a joint meeting in March with the Southeastern District and Social

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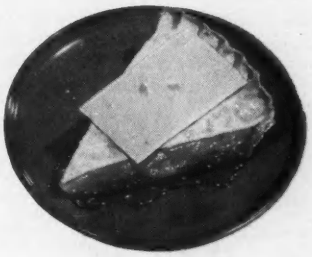

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Welfare and Public Health Section of the Home Economics Association. "Food Faddism in Weight Control—What About It?" was discussed by a panel of two: Dr. William H. Sebrell, Jr., Administrator for Institutional Research Grants, American Cancer Society, and Helen Conway, Nutritionist, Red Hood Center, New York City Health Department.

In February, the *Hudson Valley Dietetic Association* sponsored a meeting on "Careers in Dietetics" attended by some twenty-five students, accompanied by counselors, home economics teachers, and parents. Presentation of information was made by a panel, consisting of a school lunch supervisor, an administrative hospital dietitian, a therapeutic hospital dietitian, a dietitian in the commercial field, a homemaker, an Extension Service agent, and a representative from the personnel office of the State Department of Health.

The *Long Island Dietetic Association* in February devoted its meeting to the problems of rehabilitation for the handicapped home-maker. Julia Judson, Institute of Physical Medicine and Rehabilitation, New York University—Bellevue Medical Center, was the speaker. She showed slides of several interesting techniques, including a cutting board with a nail through it for holding such things as potatoes and carrots for peeling and a peg board for storing often-used equipment. A volunteer emphasized the problems by trying to do minor meal preparation with the use of only one hand.

In Utica, a booklet for use in homes for the aged has been prepared by the dietetic association. It contains recipes and other ideas to help with menu planning and the use of surplus items.

Ohio Dietetic Association. The thirty-sixth Annual Convention of the Ohio Dietetic Association was held in Dayton, April 25 to 27. The program included workshops and the following discussions:

"How Do You Get Things Done?"—Dr. Frank Sutton, Administrator, Miami Valley Hospital, Dayton

"Effective Communication—Effective Results"—Capt. John Ey, Jr., Office of the Surgeon General, Department of the Army, Washington, D. C.

"Management of Time and Effort"—Dr. Mildred Reynolds, Department of Institution Management, Purdue University, Lafayette, Indiana

"Technique, Methods and Psychology of Instructions"—Capt. John Ey

"Nurture, Environment and Dental Health"—Dr. Russell Huber, Orthodontist, Dayton

"The Community Is the Patient"—Mildred Randall, Nutrition Association of Greater Cleveland

"Nutrition Research in Air Force Flight Feeding"—Beatrice Finkelstein, Research Nutritionist, Wright Air Development Center, Dayton

"Food and the Future"—Dr. Radcliff Robinson, Bioscience Division, Battelle Memorial Institute, Columbus

A.D.A. representative at this meeting was Adelia M. Beeuwkes, Speaker of the House of Delegates.

Dietitians in the *central area* of Ohio have had two special opportunities this year. The first, in January, was a "Discussion Method Training Session" in Columbus patterned on the A.D.A. Education Section Project, "Continuing Education Programs." In it, some of the problems and principles to be used in leading discussions were emphasized, and those attending were given an opportunity to act both as leaders and participants. This was followed by a workshop in February planned around two objectives: (a) to provide an opportunity for members to work together in solving problems they had previously identified and (b) to provide an opportunity to members to continue to develop their abilities in discussion techniques begun at the meeting in January.

The *Toledo Dietetic Association*, founded just a year ago, has this year been working on career guidance. Two members have spoken at local high schools. . .Another project has been helping the vocational high school in its program for food supervisors. Classes are held five days a week for four months. Each applying student is interviewed by the school with a dietitian in attendance. At the end of the four months, the students will have four months' practical experience in a small hospital, followed by the same time in a large hospital.

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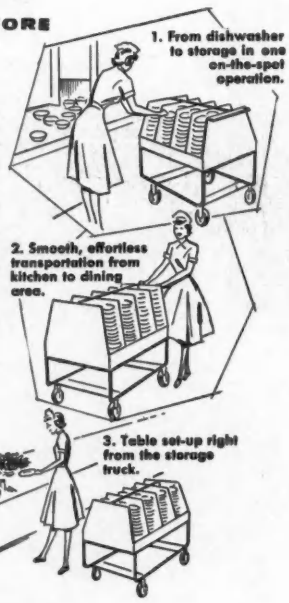
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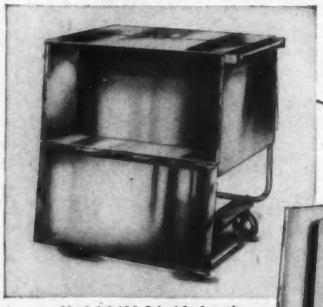

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Texas Dietetic Association. On March 15, the Texas Dietetic Association met in Dallas. Features of the program were: a paper by Dr. Robert Barton, specialist in internal medicine, who discussed the role of fat in the diet and its relation to overweight; and a report by Winifred Howard Erickson, Past-President of A.D.A. on Association affairs. Other speakers included: Roderic M. Bell, Assistant Administrator, Dallas City-Council Hospital District and Wilson Wells, Executive Secretary, Texas Commission on Patient Care, Austin.

Association Activities

Combating Food Misinformation. Just off the press is the new A. D. .A. booklet, *Food Facts Talk Back* with the subtitle, *Food Information—Fallacies and Facts*. Many fallacies, each with a refuting statement, are interpreted in language easily understood by the layman. This interesting material with an attractive format is divided into three major sections: fallacies about foods and nutrition, misconceptions about weight reduction, and myths about pregnancy and lactation.

The new booklet may be obtained from Headquarters office at 50 cents a copy. It will prove a valuable tool for the dietitian, nutritionist, and allied groups in the important projects of combating food misinformation and better informing the layman in the community. Cooperation of state and local dietetic associations will be appreciated in publicizing the availability of this material. It will be of value not only to the public in general but to groups with specialized interests, such as those devoted to weight reduction and science studies. It is a useful public relations tool for distribution to libraries, newspapers, radio, and television.

"A Dietetic Internship." The A.D.A. leaflet, "A Dietetic Internship," has been revised and newly designed. This attractice brochure, with photographs, contains information in the form of questions and answers concerning a dietetic internship. Single copies may be obtained from Headquarters office at 5 cents each, and in lots of 25, for 75 cents.

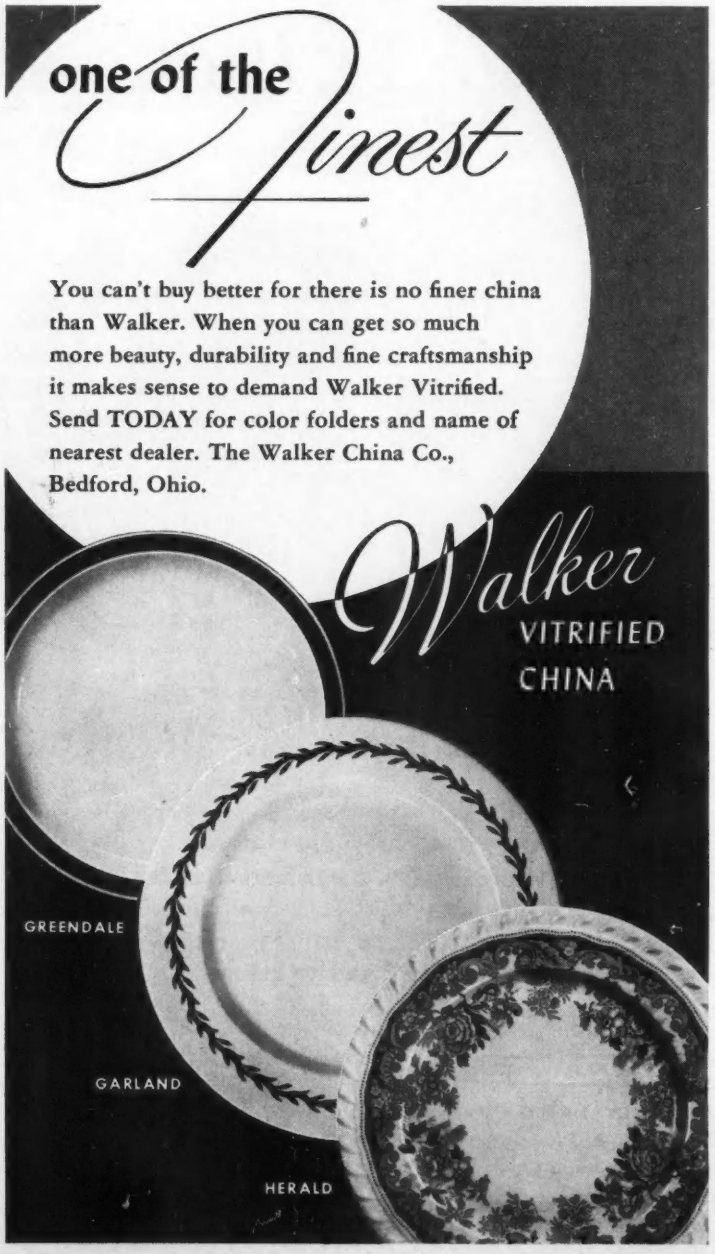
Regional NLN Conference. A National League for Nursing Regional Conference for diploma and associate degree programs, held in Boston, March 19 to 22, has been summarized by A.D.A. representatives: A. Elizabeth Crozier, Strong Memorial Hospital, Rochester, New York; Germaine Jensen, Massachusetts General Hospital, Boston; and Ann Rockwood, Hartford Hospital, Hartford, Connecticut.

Miss. Crozier, in reporting, indicated the theme of the conference was "Re-Evaluation of the Nursing Curriculum" in terms of nursing students' needs and problems and patients' needs. The development of such a curriculum involves participation of "people," as faculties, instructors, and so on. Staff improvement develops a more effective curriculum. Comprehensive nursing care can be attained only by taking into account basic nursing considerations of patients' needs and nursing problems. Rehabilitation of the patient is an important area.

Miss Jensen reviewed the talks given by the speakers. Frances Kreuter discussed "What Is Nursing?" pointing up the trends in nursing yesterday and today, with emphasis on tomorrow. To answer the question, "How do we become more effective teachers?" Katherine Norris cited ways in which the teacher can assist the student. A few methods of teaching were demonstrated also.

Dr. Benjamin Rosner stressed the importance of "Evaluation in Education." Dr. Paul Witt in his talk, "Curriculum Development through Staff Improvement," felt that through staff education, many situations in our schools could be improved.

Miss Rockwood summarized some of the concepts expressed at the meeting. For example, in nursing education, growth of the student with emphasis on her ability to recognize the needs of the patient—emotional, social, physical, and intellectual—is very important in the development of better nursing care. Education is a series of experiences, and teachers must see that the student has the proper experiences. Patient-centered teaching is helping the student to center her thoughts on all problems a patient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may have. If education is to be student-centered, students must have incentive through proper goals of their own. How can these be developed?

All instructors can benefit by discussion of methods used by others. Faculties need encouragement and guidance in accepting concepts concerning evaluation, and, most important, to be able to function in such programs. A strong instaff program and continued counseling are needed.

Miss Rockwell pointed out that as dietitians, the more we become acquainted with what nursing schools are expecting of their students and staffs, the better prepared we should be in providing experience in dietetics for nursing students, relating this to their other experiences.

Civil Defense. Regional Women's Advisory Council Meetings are being held by the Federal Civil Defense Administration. *Region VI*, which includes Colorado, Iowa, Kansas, Minnesota, Nebraska, North Dakota, South Dakota, and Wyoming, held a conference April 10 to 12 in Lincoln, Nebraska. Hazel Fehlmann, Civil Defense Chairman of the Colorado Dietetic Association, attended as A.D.A. representative. Many FCDA national and regional guests, state directors, committee chairmen, and representatives of national women's organizations were present.

It was emphasized by the different speakers that civil defense is *you*. Each one is responsible for being prepared for an emergency—the "do-it-yourself" plan. There are 53,700,000 women and 51,000,000 men in the U. S. Women can do at least 70 per cent of the 597 different kinds of services or tasks to be done in civil defense. Many jobs are yet to be filled. Find out what jobs need to be done in each of the civil defense areas, recruit and train people to do the specific jobs, and work with the civil defense director to obtain the essential equipment.

In Jefferson County, Colorado, "Operation Kids," in which 22,000 school children were evacuated on May 15, had been approved by 90 per cent of the parents by early April.

Preparedness for a disaster is the same, whether we prepare for a flood, tornado, or for an enemy attack. Some states have set up practical working plans, but there is much yet to be done in this country toward being prepared to meet an attack. Planning ahead (especially for disaster feeding)—from the viewpoint of the dietitian and nutritionist—is the key to survival.

Union College, Lincoln, Nebraska, gave a 3-hr. demonstration of a simulated atomic attack on an American city. It was the first completely civilian-planned demonstration, in which over eight hundred college students and officials took part. A complete field hospital with three operating rooms was set up, and a disaster feeding unit was established.

Mrs. Fehlmann has recently been invited to become a member of the FCDA Women's Advisory Council Committee for Region VI.

The Women's Civil Defense Conference of *Region VII* was held April 15 and 16, in San Francisco. This region includes Arizona, California, Idaho, Montana, Nevada, Oregon, Washington, Utah, Samoa, Guam, and Hawaii. Jane Sedgwick Pirkey, Civil Defense Chairman of the California Dietetic Association, represented A.D.A. Selected women from representative organizations and FCDA guests attended the meeting to consider the civilian defense program. The following was included on the program:

"Our New Dimension of Citizenship"—Jean Wood Fuller, National Director of Women's Activities, FCDA

"Civil Defense in Natural Disaster"—Gen. Holmes E. Dager, Director, Natural Disaster Office, FCDA, and Richard Gordon, Red Cross-FCDA Liaison Officer

"Survival Planning"—George B. Owen, Survival Projects Office, FCDA

"How to Tell and Sell the CD Story"—Sr. Capt. M. Lewis Kendell, Salvation Army, Eureka, and Samuel Jackson, Field Representative, California Disaster Office

"Radiological Hazards"—Brig. Gen. Crawford Sams, M.D., University of California

A workshop for heads of women's councils and state representatives was held simultaneously with a workshop on home preparedness for organization representatives. A tour was included to

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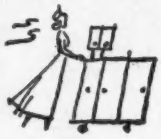

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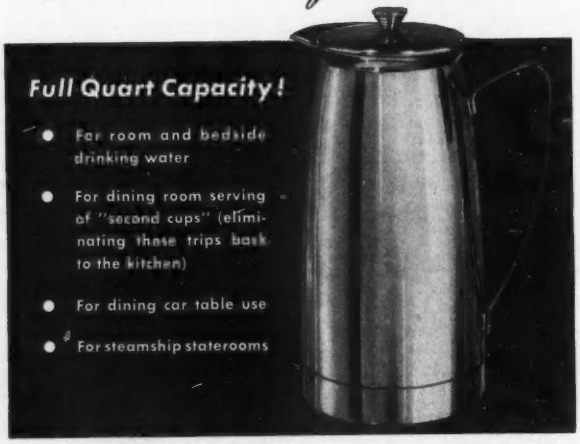
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The Division of Women's Activities in FCDA is an educational program, directed toward the individual and family unit to train them in actions which will prepare them to protect themselves when disaster strikes.

It was fitting that emphasis in training would be placed on the mass feeding courses developed jointly by FCDA and the American National Red Cross. The action which can be taken in the women's program by dietitians and nutritionists is in the important field of providing qualified instructors for mass feeding courses. Our members are encouraged to volunteer their services in teaching to state Civil Defense agencies, local Red Cross chapters, or other community organizations.

University of Illinois. Clara Zempel was A.D.A.'s representative at the dedication ceremonies of the beautiful new Home Economics Buildings at the University of Illinois, Urbana—Bevier Hall and the Child Development Laboratory. Dr. Janice M. Smith, an A.D.A. member, is Head of the Department of Home Economics.

The two-day ceremony, held on April 4 and 5, was attended by several hundred professional people, including many A.D.A. members from the Midwest.

"The Challenge for Home Economics," a symposium moderated by Dr. Beulah Gillaspie, Purdue University, emphasized the vital areas of the home, the community, and that of international affairs. Speakers were: Pauline P. Knapp, The Merrill-Palmer School; Kathryn Van Aken Burns, University of Illinois; and Jean McNaughton, FAO.

Dr. E. Neige Todhunter, moderator, and other members of a symposium, forcibly pointed out the challenge for home economics in higher education, in research, and in business. President James A. McCain, Kansas State College; Dr. Pearl P. Swanson, Iowa State College; and Gertrude Austin, Sunkist Growers, respectively represented these fields.

President David Dodds Henry, University of Illinois, presiding at the convocation, introduced many who gave greetings, after which Honorable Florence E. Allen, Judge, Circuit Court of Appeals, Cincinnati, gave the address, "Map for Living—50 Year Plan."

The A.D.A. representative joined other representatives in the academic procession.

The new home economics buildings provide facilities for undergraduate and graduate teaching, research, and extension programs in the following areas: textiles and clothing, home management (including housing and equipment), foods and nutrition, institution management, and child and family.

UNICEF. Anna M. Tracy, Columbia University, represented the Association at the annual meeting of the United States Committee for UNICEF, held at the United Nations Headquarters on May 1.

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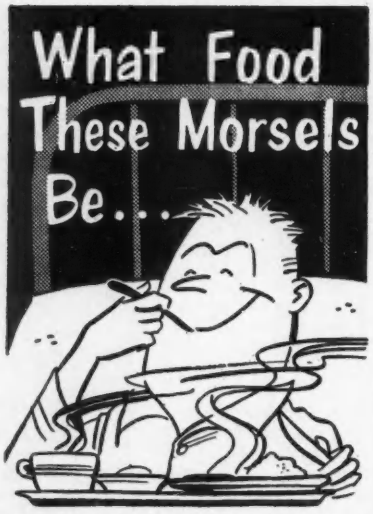

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Obituaries

Laura McLaughlin. Notice has been received in the A.D.A. office of the death on February 3, 1957 of Laura McLaughlin of Toledo. Miss McLaughlin had formerly been on the faculty of the Home Economics Department, Texas State College for Women, Denton, and on the staff of the Texas Agricultural Experiment Station, College Station. She had been a member of A.D.A. since 1938.

Estelle E. Nesbitt. The Association has been notified of the death of Estelle E. Nesbitt on April 25 in St. Petersburg, Florida. Miss Nesbitt, who had been a life member of A.D.A. since 1929, had worked in Connecticut, Indiana, Massachusetts, and New Jersey, and in 1933 was employed by the Peiping Union Medical College, Peiping, China. In retirement, Miss Nesbitt had been active in community affairs in St. Petersburg.

M. Agnes Richling. The A.D.A. office has been notified of the death of M. Agnes Richling on March 25 in Omaha. Miss Richling has been a member of the Association since 1940, and had formerly been employed on the staffs at Norfolk State Hospital, Norfolk Nebraska, and Doctor's Hospital, Omaha.

News of Products and Services

Universal Dishwashing Machinery Co. has put on the market two new dishwashers, "SR Regular Model" and "SD Deluxe dishwasher" (all stainless steel). Both models have three doors, two operating simultaneously. The wash and rinse is designed for fingertip, single-lever operation that cannot be operated together. The same single lever operates the three-door interlock. Racks 19¾ by 19¾ in. can be accommodated, with a newly designed power wash that revolves above and below the dishes. All interior parts—tracks, strainer pans, shelves, wash-and-rinse assembly—are designed to be easily removable by hand. The motor is 1 H.P., and the wash pump, equipped with carbon seal, is self draining from the bottom of the pump. Installation can be arranged for either straight-through or corner operation.

"For a Prettier, Peppier You!" is the title of a new leaflet by the *Metropolitan Life Insurance Company*. Slanted to appeal to the teen-age girl, this leaflet discusses the need for a balanced diet and lists the different food groups necessary for the best possible development. Also available on a loan basis is a display, *Teen-Ager Nutrition*, to point up the information given in the leaflet.

Two machine dishwashing compounds, "Advance" and "Release," have been announced by the *DuBois Co. Inc.* "Advance" is a water softener developed to provide lime control and eliminate sludge or scum in the dishwater. Its cleaning power does not attack soft metal parts of dish machines, and it is safe on aluminum. It is packaged twenty-eight cartons to the case. "Release" is a heavy-duty compound for excessive soil loads, claimed to be safe for use under normal operating conditions.

Griswold Manufacturing Company is featuring a new all-purpose electric commercial range. The three all-purpose tops are individually controlled by separate thermostats to deliver the exact desired surface cooking temperature from 250°F. to 850°F. Any of the three 12 by 24 in. surface sections can be converted to a section which contains two griddle-hot-plates. There is a grease trough around all four sides of the cooking top and twin deep grease troughs accessible from the front. This Griswold all-purpose range is available with an oven base, a cabinet base, or merely a twin unit frame.

"From Flour to Bread," a new brochure published by the *Wheat Flour Institute*, is a comprehensive handbook for students, teachers, writers, editors, and others of professional status. Bakers' breads, baking mixes, and frozen breads are discussed as well as techniques for making yeast and quick-type breads. Basic recipes and variations and reference charts for judging the quality of finished products are included. Data on the food value of some popular breads and standards for enriching are also presented. This brochure is designed primarily as a reference presenting basic and technical information on the many different breads made from wheat flour. It is liberally and effectively illustrated with many photographs. Copies may be obtained from the Institute for 25 cents each.

Food Machinery and Chemical Corporation has announced a new waste disposer called the "FMC Jet Disposer." It is said to give a faster, finer grind which, when mixed with a jet of water, insures a continuous liquid flow into the sewer line under pressure. The FMC Jet Disposer first breaks bones or other sizable waste into particle size with twin breaking heads. Centrifugal force pushes the particles into the grinding rings where continuous grinding action takes place. During the grinding process water is added to liquefy the waste. Sorting and storage of food waste is eliminated, and there is a silver trap which guards against damage and loss of silverware. The Jet is ordinarily installed under the soiled dish table. Six models ranging from ½ to 2 H.P. are available.

Edward Don & Company now has a new Royalite Cutlery Box made of rubber-plastic, a special composition which reduces noise. It has rounded corners, weighs 1½ lb., and has sure-grip rims. It is resistant to acids, alkalies, grease, odors, and stains and is supposed not to dent, crack, chip, or peel. The size is 20 by 11 by 3½ in.

Swift & Company has announced the appointment of Jeanne Paris as its new Director of Home Economics.